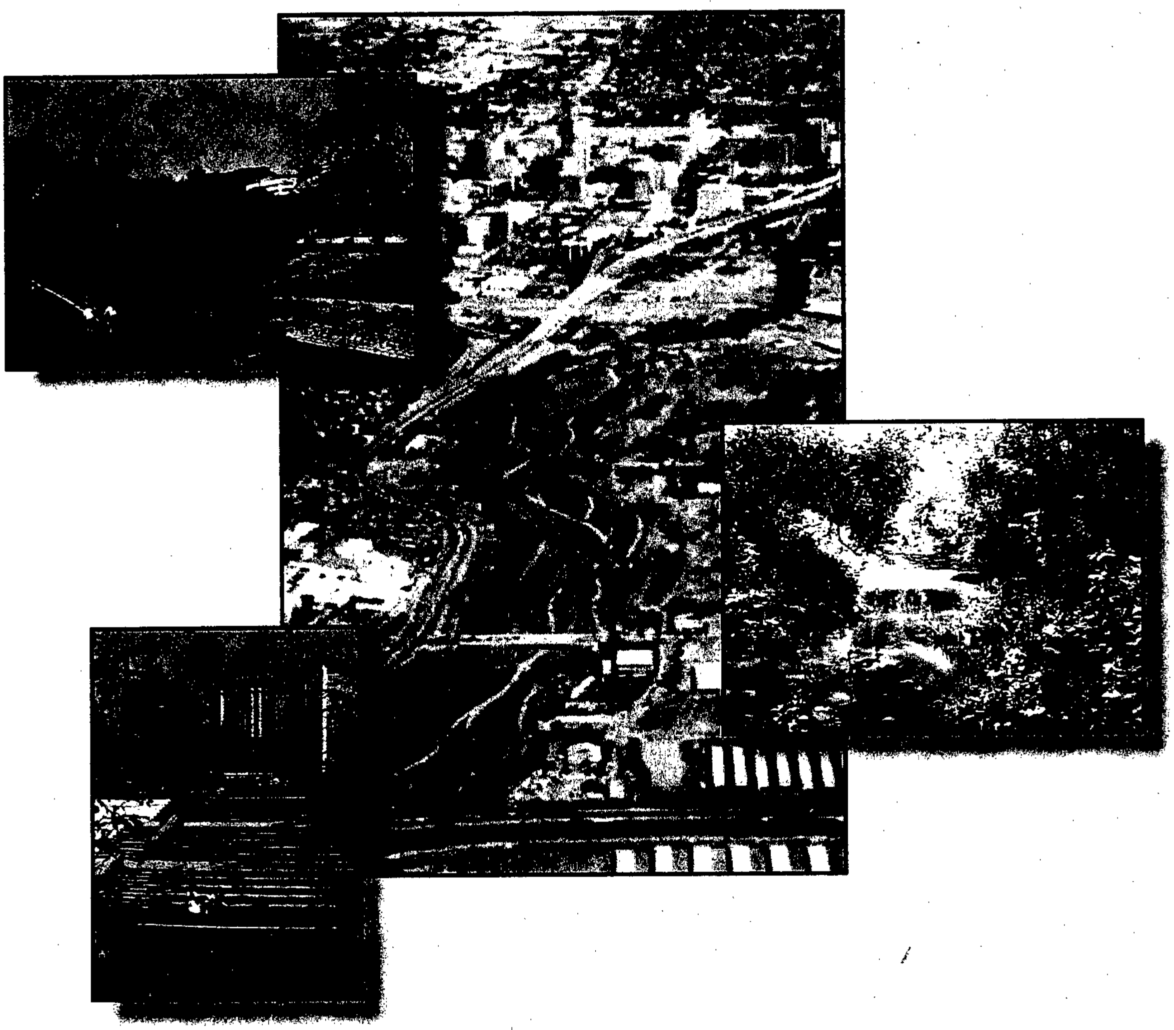
Final General Re-Evaluation & Environmental Report for Proposed Project Modifications

Guadalupe River Project
Downtown San Jose, California



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13. ABSTRACT *(Maximum 200 words)*

This report addresses proposed modifications to the federally authorized Guadalupe River Project in downtown San Jose, California. These modifications include flood protection, recreation and related mitigation measure primarily along 2.6 miles of the Guadalupe River and two related offsite mitigation areas. This report support decision making by the U.S. Army Corps of Engineers (Corps), Santa Clara Valley Water District (SCVWD), and other responsible agencies to implement proposed project modifications and ensure compliance with the National Environmental Policy Act (NEPA), California Environmental Quality Act (CEQA), and other pertinent laws and regulations.

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Proposed Modifications to the Guadalupe River Project, Downtown San Jose, California

(Supplemental to the 1985 Final Environmental Impact Statement for the Guadalupe River Flood Control and Adjacent Streams Investigation, Santa Clara County, California)

Volume 2A
Appendix 1, Appendix 2, and Appendix 4

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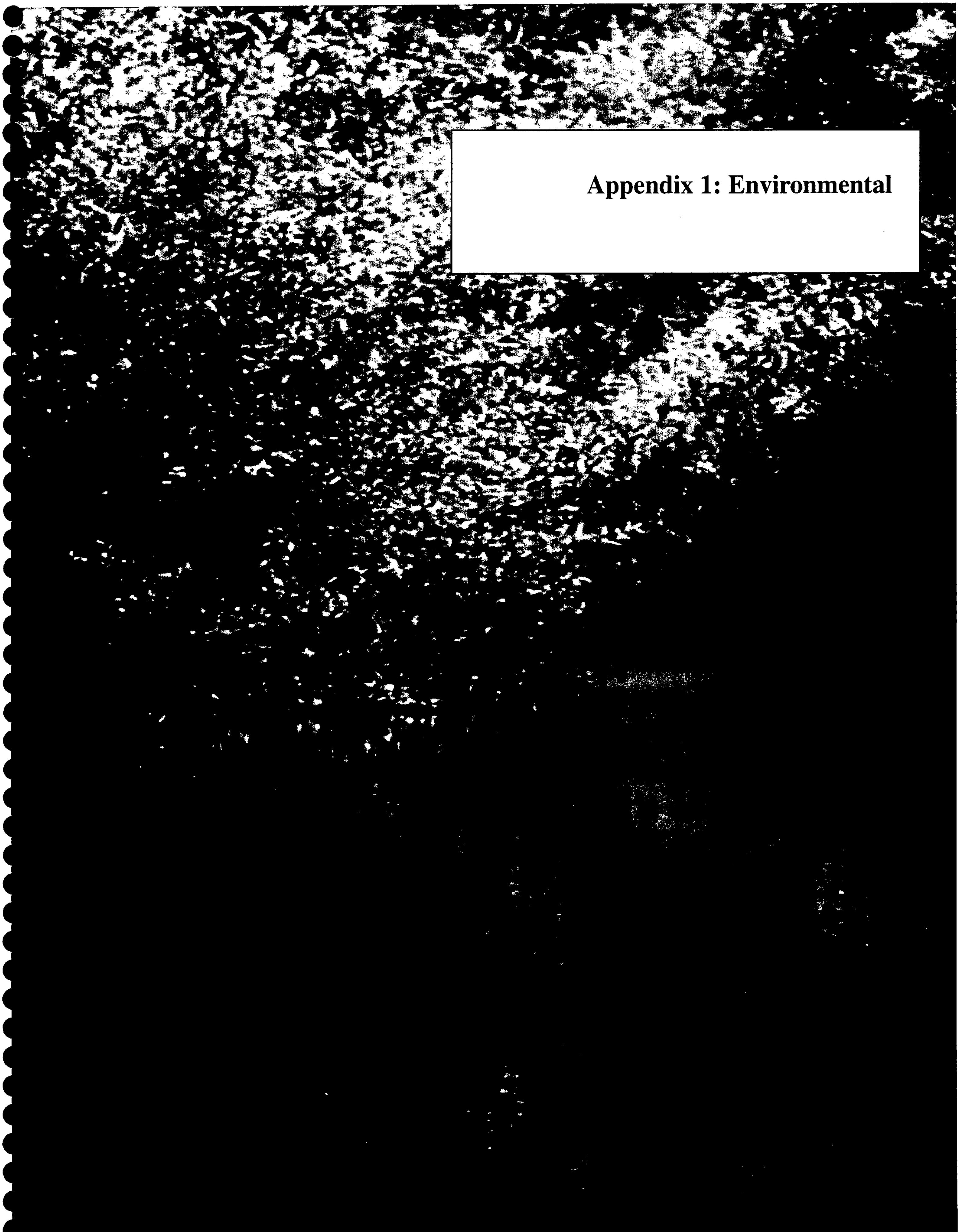

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Measured Flow and Water Temperature Data and Suitability for Life Stages of Anadromous Fish

1A.1 Measured Flow and Water Temperature Data

Streamflow on the mainstem Guadalupe River is monitored by the Santa Clara Valley Water District (SCVWD) (e.g., stream gage Stations 20 and 23B) and by the U.S. Geological Survey (USGS) (Figure 1A-1). Stream gage Station 20 is located at the Alamitos drop structure and measures and records flow from Almaden Lake, which forms the terminus of both Alamitos and Guadalupe Creeks. Stream gage Station 23B is located near Foxworthy Avenue at the boundary of Reaches 10B and 10C and is downstream from the Guadalupe River–Ross Creek confluence. The USGS stream gage is located in downtown San Jose, immediately upstream from the St. John Street Bridge, which is downstream from the Guadalupe River–Los Gatos Creek confluence.

Tables 1A-1 through 1A-3 present the frequency of the daily flows as percentiles by month at the three monitoring sites on the Guadalupe River. The percentile of a flow value is the percent of days occurring in that particular month over the period of record that had lower flow values. For example, the flow value corresponding to the 20th percentile represents the flow that is equaled or exceeded 80 percent of the time; therefore, the 50-percentile flow represents the median (or middle) flow value for the period of record. This means that 50 percent of the flows equaled or exceeded the median flow and 50 percent of the flows equaled or were below the median flow over the period of record. The zero-percentile and 100-percentile values represent the absolute minimum and maximum daily flows, respectively.

In general, median flows at the three gaging stations are highest during spring (i.e., March and May). At stream gage Station 20, the greatest median flow is 12.5 cubic feet per second (cfs) and occurs in May (Table 1A-1). Farther downstream at stream gage Station 23B and the USGS stream gage, however, median flows peak at 13.4 cfs and 19.5 cfs, respectively, in March (Tables 1A-2 and 1A-3). At the two downstream stream gages (i.e., stream gage Station 23B and the USGS stream gage), median flows drop sharply, beginning in April and lasting through November, compared to median flows at stream gage Station 20, which are much higher (e.g., 4.8 cfs to 12.5 cfs) during this same period. Median flows at stream gage Station 23B during the period of record from 1972 through 1995 were zero cfs from June through October. The current flashboard diversion dams memorandum of understanding (MOU; #0228-97) between SCVWD and the California Department of Fish and Game (CDFG) requires that the release from the Alamitos drop structure on the Guadalupe River maintain a minimum of 1 cfs, as measured at stream gage Station 23B, when the flashboards are in place. The flashboards are normally installed on the Alamitos drop structure during April to September/October. Current median flow values are therefore higher than those reported for the 1972–1995 period of record.

In late 1995, SCVWD initiated hourly monitoring of water temperature at various stations throughout the Guadalupe River system. SCVWD has monitored water temperatures at more than 20 locations throughout Alamitos and Guadalupe Creeks, Arroyo Calero, and the Guadalupe River (Figure 1A-1). Hourly water temperature is measured using electronic data loggers that are left in the creeks continuously and downloaded periodically to retrieve the water temperature data. For the purposes of this discussion, water temperature information is presented and discussed for six important monitoring sites on the Guadalupe River (i.e., Alamitos drop structure, Branham Lane, stream gage Station 23B, the Guadalupe River–Los Gatos Creek confluence, Interstate 880 (I-880), and Montague Expressway).

Percentiles of the hourly water temperature data are presented in Tables 1A-4 through 1A-15 by month and illustrate potential response of each species' life stage for each temperature monitoring station. Similar to the percentile tables for streamflow, these percentile tables for water temperature represent the relative ranking of all measured water temperatures within each month. The full range of variation of the measured water temperatures by month is bracketed by the zero-percentile value (minimum measured temperature) and the 100-percentile value (maximum measured temperature).

Water temperature variations are a function of changes in meteorological conditions (e.g., changes in air temperature), channel characteristics (e.g., water depth), and the effects of water management operations (e.g., reservoir releases). As an example of seasonal variation, median temperatures at stream gage 23B go from 53.6 °F (12.0 °C) in January to 75.8 °F (24.3 °C) in July. Differences between minimum and maximum temperatures for a month can be fairly large. For example, the August temperature ranges are: 66.3 °F (19.1 °C) to 77.7 °F (25.4 °C) at Montague Expressway, 65.6 °F (18.7 °C) to 75.6 °F (24.2 °C) at I-880, 66.2 °F (19.0 °C) to 72.4 °F (22.4 °C) just upstream from the Guadalupe River–Los Gatos Creek confluence, 68.2 °F (20.1 °C) to 81.6 °F (27.6 °C) at stream gage 23B, 69.3 °F (20.7 °C) to 86.8 °F (30.4 °C) at Branham Lane, and 60.5 °F (15.8 °C) to 88.0 °F (31.1 °C) at the Alamitos drop structure. (It is important to note that some of the extreme readings at the Alamitos drop structure in spring may be a result of a malfunction of the thermograph and may not represent actual measured water temperature.).

1A.2 Suitability For Life Stages Of Anadromous Fish

The following discussion presents information on the suitability of the Guadalupe River, based on water temperature, for critical life stages of steelhead and chinook salmon. Water temperature is considered optimal when it is not detrimental to growth and survival of the species' life stage. Water temperature is considered suboptimal when it limits growth and survival of the species' life stage. Lethal effects depend on the duration and frequency of exposure and the rate of temperature change, and occur at temperatures that exceed the physiological limits of the species' life stage and result in death.

The following analysis is based on water temperature monitored at six locations on the Guadalupe River by SCVWD between September 1995 and November 1997. Figure 1A-1 shows the location of flow and water temperature monitoring locations on Alamitos and Guadalupe Creeks, Arroyo Calero, and the Guadalupe River.

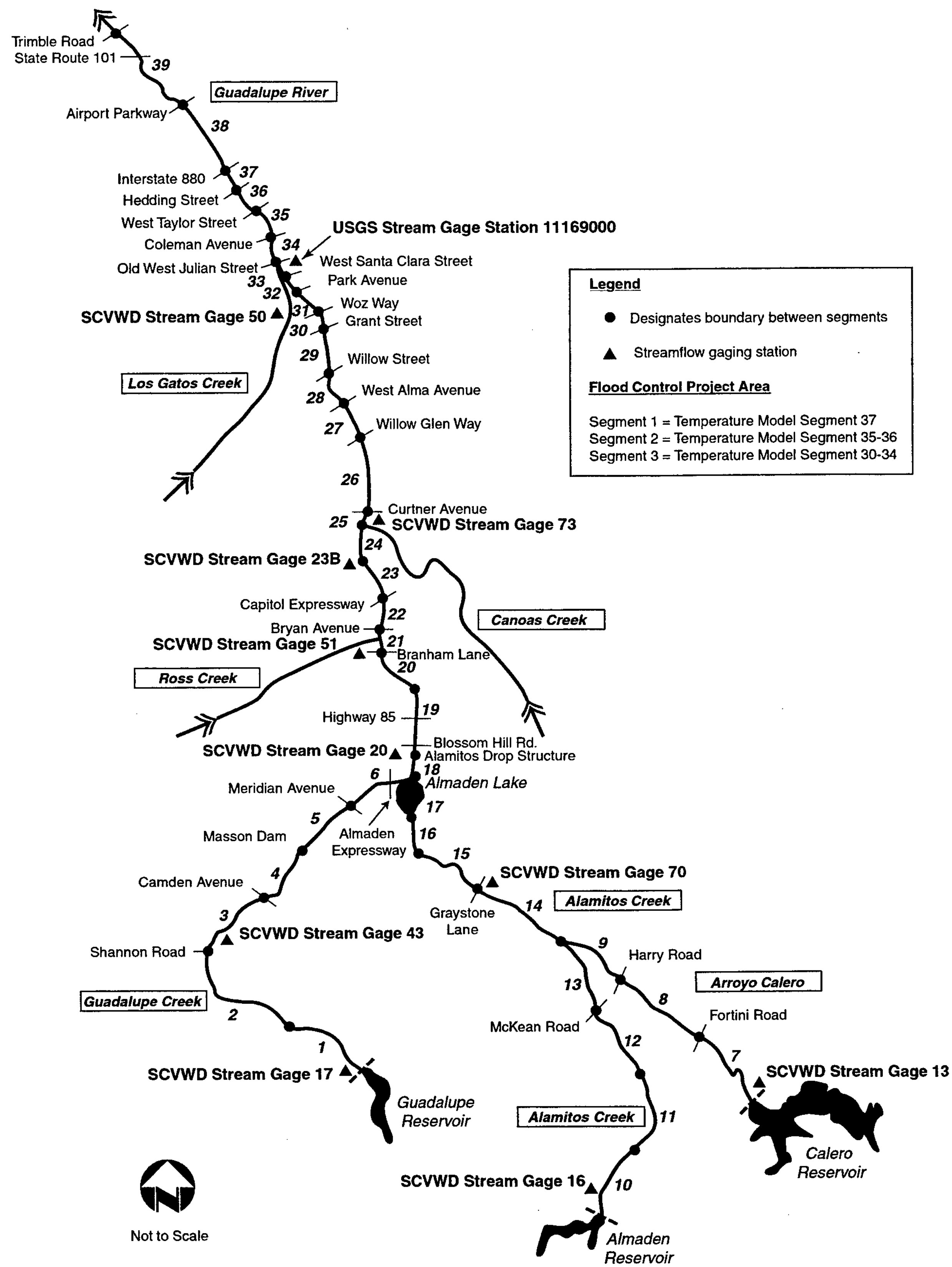


Figure 1A-1. Schematic Diagram of Segments Used in the Guadalupe River Temperature Model

TABLE 1A-1. Range[a] of Daily Guadalupe River Flows Measured at the Alamitos Drop Structure Stream Gage Station No. 20 (cfs)[b]

Percentages	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	1.3	0.0	0.0	0.0
20%	0.0	0.0	0.6	2.0	1.8	3.4	1.9	4.3	4.1	2.0	1.1	0.8
30%	1.5	0.1	3.1	4.1	3.8	5.7	3.8	8.0	6.7	4.2	2.9	3.0
40%	3.7	2.4	4.8	6.1	6.2	8.6	5.9	10.2	9.3	7.2	5.8	5.0
50%	5.9	4.8	6.9	8.1	10.3	12.0	9.9	12.5	11.1	9.3	8.5	8.3
60%	7.8	6.8	9.5	10.6	14.7	15.8	15.0	14.1	12.4	10.6	10.7	10.8
70%	10.5	9.2	12.0	16.0	22.6	30.4	22.9	15.9	14.0	12.0	12.7	12.0
80%	12.7	12.3	15.5	31.5	74.9	100.6	44.8	18.7	16.2	14.5	15.0	15.0
90%	15.0	16.8	24.7	145.0	214.4	224.6	141.0	23.4	20.9	18.0	19.0	18.0
100%	440.4	299.8	589.5	1542.6	1999.8	2342.4	1571.6	413.2	71.6	112.7	61.7	45.0

Note:
[a] Range of flow values shown as percentage of time during the month that the flow is less than the stated value.
[b] Period of Record: 1962 – 1995

TABLE 1A-2. Monthly Percentiles[a] of Daily Guadalupe River Flows at Reach 10B – Stream Gage Station 23B (cfs)[b]

Percentages	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20%	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
30%	0.0	0.0	0.0	0.1	0.2	0.7	0.0	0.0	0.0	0.0	0.0	0.0
40%	0.0	0.1	0.3	1.4	1.0	4.6	0.2	0.0	0.0	0.0	0.0	0.0
50%	0.0	0.7	1.6	3.5	3.3	13.4	1.0	0.1	0.0	0.0	0.0	0.0
60%	0.1	1.6	3.6	6.0	11.5	31.4	4.2	0.4	0.1	0.3	0.0	0.1
70%	0.8	3.4	6.3	14.4	32.0	62.9	15.8	1.4	0.5	0.7	0.3	0.6
80%	2.0	6.3	12.5	40.0	91.2	111.3	37.1	3.8	1.1	1.2	1.6	1.4
90%	4.6	16.1	35.7	133.9	233.0	242.7	70.8	12.6	3.2	2.5	2.9	3.2
100%	68.7	523.3	764.9	2460.0	2600.2	3190.0	1619.5	377.3	49.0	30.4	45.5	60.3

Note:
[a] Range of flow values shown as percentage of time during the month that the flow is less than the stated value.
[b] Period of Record: 1972 - 1995

TABLE 1A-3. Monthly Percentiles[a] of Daily Guadalupe River Flows at Downtown San Jose USGA Stream Gage (cfs)[b]

Percentages	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10%	0.0	0.1	0.3	0.5	0.6	0.5	0.0	0.0	0.0	0.0	0.0	0.0
20%	0.0	0.4	0.8	1.8	1.9	1.7	0.3	0.2	0.1	0.0	0.0	0.0
30%	0.3	0.8	1.7	2.8	3.1	3.8	0.9	0.5	0.3	0.3	0.0	0.0
40%	0.5	1.5	2.9	5.0	5.4	7.6	2.1	0.8	0.6	0.5	0.2	0.2
50%	0.9	2.2	4.2	8.4	10.0	19.5	3.5	1.3	1.0	0.7	0.4	0.3
60%	1.7	3.2	7.0	14.0	17.0	51.0	7.0	2.0	1.6	1.1	0.8	0.8
70%	2.5	6.3	13.0	27.0	46.1	93.5	15.4	3.0	2.2	2.1	1.6	1.5
80%	3.9	11.0	24.0	73.0	142.6	199.0	42.2	4.4	3.1	3.0	2.2	2.7
90%	9.3	42.2	79.4	246.5	495.6	520.5	127.1	14.1	5.0	4.7	3.5	6.4
100%	248.3	1140.0	1190.0	4680.0	6632.2	7870.0	3200.0	953.7	175.0	79.0	142.0	193.7

Note:
[a] Range of flow values shown as percentage of time during the month that the flow is less than the stated value.
[b] Period of Record: 1970 - 1995

1A.2.1 Steelhead

Although juvenile steelhead rear in fresh water year round, July through October (with emphasis on July and August) was chosen to evaluate the potential for the stream to support juvenile steelhead. July and August are the months when water temperatures typically are most limiting. Based on the available data, optimal and suboptimal water temperatures for juvenile steelhead rearing were present during the monitoring period at all six monitoring stations (i.e., at the Alamitos drop structure, Branham Lane, stream gage Station 23B, Guadalupe River–Los Gatos Creek confluence, I-880, and Montague Expressway) from July through October (Tables 1A-4 through 1A-9). Water temperatures considered lethal for juvenile rearing were measured at four of the six sites; these excessive water temperatures occurred at the Alamitos drop structure, Branham Lane, stream gage Station 23B, and Montague Expressway (Tables 1A-4, 1A-5, 1A-6, and 1A-9, respectively). Measured water temperatures at the Guadalupe River–Los Gatos Creek confluence and I-880 did not exceed the 77 °F lethal threshold for juvenile rearing (Tables 1A-7 and 1A-8, respectively).

Water temperatures for steelhead egg incubation (spawning) are more limiting than water temperatures for prespawning adults. Water temperatures for steelhead spawning (i.e., January through April) were optimal or suboptimal for the majority of the spawning period at all stations (Tables 1A-4 through 1A-9); data for the Guadalupe River–Los Gatos Creek confluence monitoring site are mostly incomplete (Table 1A-7). Water temperatures considered lethal for steelhead spawning occurred more than one-half the time by at least April at all six monitoring sites. For smoltification (March through June), optimal or suboptimal water temperatures were present at least 80 percent of the time in March at the Alamitos drop structure, Branham Lane, stream gage Station 23B, and at Montague Expressway (Tables 1A-4, 1A-5, 1A-6, and 1A-9, respectively). Temperature data for March are not available for monitoring stations at I-880 and the Guadalupe River–Los Gatos Creek confluence (Tables 1A-7 and 1A-8). By June, temperatures inhibiting steelhead smoltification occurred from 70 percent to 100 percent of the time (Tables 1A-4 through 1A-9).

1A.2.2 Chinook Salmon

In fall (i.e., September through December), water temperatures at all six monitoring stations indicate that suboptimal or optimal conditions for prespawning adult chinook salmon were present nearly 100 percent of the time (Tables 1A-10 through 1A-15). All hourly water temperatures measured during September through December for the Guadalupe River at the Montague Expressway, I-880, and just upstream from the Guadalupe River–Los Gatos Creek confluence were suboptimal or optimal. In the upper Guadalupe River (at the Alamitos Drop Structure, Branham Lane, and Stream Gage 23B), measured temperatures were only lethal to adult chinook salmon during September, and even during September, no more than 30 percent of the measured temperatures were lethal. Although data were not collected during December at the Alamitos drop structure (Table 1A-10) or at the Guadalupe River–Los Gatos Creek confluence (Table 1A-13), prespawning conditions most probably fell within the optimal or suboptimal range for chinook salmon because water temperatures are typically lower in December than in the previous months (e.g., September through November).

Water temperature was lethal for eggs from 80 percent to almost 100 percent of the time at all sites in October and from less than 10 percent to 100 percent of the time in November (Tables 1A-10 through 1A-15). December data are not available at three of the sites (i.e., at the Alamitos drop structure, Branham Lane, and the Guadalupe River–Los Gatos Creek

confluence); however, mostly optimal and suboptimal conditions for eggs were present in December at stream gage Station 23B and I-880, although not at Montague Expressway (Table 1A-15). By January, water temperature was mostly optimal at all sites for chinook salmon eggs (Tables 1A-10 through 1A-15).

A majority of water temperatures for juvenile chinook salmon rearing (including smolt) at all sites were optimal or suboptimal from February through June (Tables 1A-10 through 1A-15). Peak temperatures in April, May, and June reached levels considered lethal for juvenile chinook salmon from zero percent to 30 percent of the time for all monitoring sites. The Guadalupe River–Los Gatos Creek confluence monitoring site was the only location where water temperature did not exceed the threshold for juvenile chinook salmon rearing (Table 1A-13).

TABLE1A-4. Measured Water Temperature Ranges[1] (°F) in the Guadalupe River at the Alamitos Drop Structure and Temperature Thresholds for Important Steelhead Life Stages

This table shows the range of measured water temperatures in the Guadalupe River during the spawning, smoltification, and rearing periods for steelhead. It also indicates the percentage of time that water temperatures are optimal, suboptimal, and lethal during these periods.

SPAWNING (JANUARY - APRIL)[2]

Percentages	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0%	49.8	50.4	51.7	46.0								
10%	51.1	52.3	54.3	57.4								
20%	51.7	53.6	54.9	58.7								
30%	51.8	54.9	55.9	60.0								
40%	52.3	55.8	56.8	60.6								
50%	53.0	56.8	57.4	61.9								
60%	53.0	57.4	58.1	63.1								
70%	53.0	58.1	58.7	64.4								
80%	53.6	58.7	60.0	66.3								
90%	53.6	59.3	60.6	68.9								
100%	54.9	61.9	65.0	76.4								

SMOLTIFICATION (MARCH - JUNE)[2]

Percentages	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0%			51.7	46.0	42.7	49.7						
10%			54.3	57.4	57.2	59.2						
20%			54.9	58.7	61.2	66.1						
30%			55.9	60.0	65.0	71.3						
40%			56.8	60.6	66.9	72.6						
50%			57.4	61.9	68.2	73.2						
60%			58.1	63.1	69.4	73.8						
70%			58.7	64.4	70.7	74.5						
80%			60.0	66.3	73.2	75.1						
90%			60.6	68.9	77.5	76.4						
100%			65.0	76.4	97.6	86.9						

SUMMER REARING (JULY - OCTOBER)[2]

Percentages	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0%							69.9	60.5	66.9	60.5		
10%							73.7	72.4	69.4	61.7		
20%							74.3	73.7	70.5	63.6		
30%							75.0	75.0	71.2	64.3		
40%							75.6	75.6	71.8	64.9		
50%							76.4	77.7	72.4	65.5		
60%							78.3	79.0	72.4	66.1		
70%							79.0	79.6	73.0	67.6		
80%							79.6	80.9	78.3	68.5		
90%							80.3	82.2	80.3	69.4		
100%							82.8	88.0	82.2	71.8		

Notes: Temperature data collected by SCVWD during 1996 and 1997.

[1] Percentage of time that temperature is less than stated value. Data collected at 1-hour intervals.

[2] Lifestages may be present during months where data are not shown, however, focus of analysis is on those months when temperatures are typically limiting.

Legend:

#°F	Suboptimal Water Temperatures	#°F	Lethal Water Temperatures
#°F	Optimal Water Temperatures	ND	No Data

TABLE 1A-5. Measured Water Temperature Ranges[1] (°F) in the Guadalupe River at Branham Lane and Temperature Thresholds for Important Steelhead Life Stages

This table shows the range of measured water temperatures in the Guadalupe River during the spawning, smoltification, and rearing periods for steelhead. It also indicates the percentage of time that water temperatures are optimal, suboptimal, and lethal during these periods.

SPAWNING (JANUARY - APRIL)[2]

Percentages	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0%	49.8	51.1	52.4	54.3								
10%	51.1	52.4	54.9	57.5								
20%	51.7	53.6	55.6	59.4								
30%	52.4	54.9	56.2	60.0								
40%	53.0	56.2	56.8	61.3								
50%	53.0	56.8	57.5	62.5								
60%	53.6	57.5	58.1	63.8								
70%	53.6	58.1	59.4	65.0								
80%	54.3	58.7	60.0	66.9								
90%	54.9	60.0	61.3	70.1								
100%	55.6	63.1	66.3	77.1								

SMOLTIFICATION (MARCH - JUNE)[2]

Percentages	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0%			52.4	54.3	56.2	64.4						
10%			54.9	57.5	63.8	66.9						
20%			55.6	59.4	65.0	68.0						
30%			56.2	60.0	66.8	68.8						
40%			56.8	61.3	68.2	69.9						
50%			57.5	62.5	69.4	71.3						
60%			58.1	63.8	71.2	73.0						
70%			59.4	65.0	72.6	75.0						
80%			60.0	66.9	74.3	76.9						
90%			61.3	70.1	76.4	79.0						
100%			66.3	77.1	82.0	84.2						

SUMMER REARING (JULY - OCTOBER)[2]

Percentages	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0%							66.1	69.3	67.4	59.2		
10%							70.5	71.2	69.3	62.4		
20%							71.8	71.9	70.5	63.6		
30%							72.6	73.0	71.2	64.3		
40%							73.8	73.8	71.8	64.9		
50%							75.1	75.1	72.4	65.5		
60%							76.4	76.4	73.0	66.1		
70%							78.2	77.7	73.8	66.8		
80%							79.6	79.5	75.1	68.0		
90%							82.2	82.2	77.1	69.3		
100%							86.8	86.8	83.5	73.7		

Notes: Temperature data collected by SCVWD during 1996 and 1997.

[1] Percentage of time that temperature is less than stated value. Data collected at 1-hour intervals.

[2] Lifestages may be present during months where data are not shown, however, focus of analysis is on those months when temperatures are typically limiting.

Legend:

#°F	Suboptimal Water Temperatures	#°F	Lethal Water Temperatures
#°F	Optimal Water Temperatures	ND	No Data

TABLE1A-6. Measured Water Temperature Ranges[1] (°F) in the Guadalupe River at Reach 10B (Stream Gage 23B) and Temperature Thresholds for Important Steelhead Life Stages

This table shows the range of measured water temperatures in the Guadalupe River during the spawning, smoltification, and rearing periods for steelhead. It also indicates the percentage of time that water temperatures are optimal, suboptimal, and lethal during these periods.

SPAWNING (JANUARY - APRIL)[2]

Percentages	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0%	49.8	52.4	53.0	54.9								
10%	51.7	54.3	55.6	59.4								
20%	52.4	55.3	56.8	61.3								
30%	53.0	56.3	57.5	62.5								
40%	53.6	57.3	58.1	63.8								
50%	53.6	58.3	59.4	65.1								
60%	54.3	59.3	60.6	66.3								
70%	54.9	60.3	61.9	68.2								
80%	55.6	58.1	65.1	69.5								
90%	57.5	59.4	66.3	70.7								
100%	60.0	63.2	70.1	74.5								

SMOLTIFICATION (MARCH - JUNE)[2]

Percentages	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0%			53.0	54.9	56.8	66.3						
10%			55.6	59.4	65.1	70.1						
20%			56.8	61.3	66.9	70.7						
30%			57.5	62.5	68.8	71.3						
40%			58.1	63.8	70.1	72.0						
50%			59.4	65.1	70.7	72.6						
60%			60.6	66.3	72.0	73.2						
70%			61.9	68.2	73.2	73.9						
80%			65.1	69.5	74.5	75.2						
90%			66.3	70.7	76.4	76.1						
100%			70.1	74.5	81.6	79.0						

SUMMER REARING (JULY - OCTOBER)[2]

Percentages	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0%							69.5	68.2	65.1	54.9		
10%							73.2	71.3	67.6	59.3		
20%							73.9	72.6	68.8	60.6		
30%							74.5	73.9	69.5	61.9		
40%							75.2	73.9	70.1	64.4		
50%							75.8	75.2	71.3	65.7		
60%							76.4	75.2	72.0	66.3		
70%							77.1	75.8	72.6	67.6		
80%							77.7	76.8	73.2	69.5		
90%							79.0	77.7	74.5	70.7		
100%							82.2	81.6	80.3	74.5		

Notes: Temperature data collected by SCVWD during 1996 and 1997.

[1] Percentage of time that temperature is less than stated value. Data collected at 1-hour intervals.

[2] Lifestages may be present during months where data are not shown, however, focus of analysis is on those months when temperatures are typically limiting.

Legend:

#°F (boxed)	Suboptimal Water Temperatures
#°F	Optimal Water Temperatures
#°F (shaded)	Lethal Water Temperatures
ND	No Data

TABLE1A-7. Measured Water Temperature Ranges[1] (°F) in the Guadalupe River just Upstream of the Guadalupe - Los Gatos Confluence and Temperature Thresholds for Important Steelhead Life Stages

This table shows the range of measured water temperatures in the Guadalupe River during the spawning, smoltification, and rearing periods for steelhead. It also indicates the percentage of time that water temperatures are optimal, suboptimal, and lethal during these periods.

SPAWNING (JANUARY - APRIL)[2]

Percentages	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0%	ND	ND	ND	63.6								
10%	ND	ND	ND	63.8								
20%	ND	ND	ND	64.3								
30%	ND	ND	ND	64.8								
40%	ND	ND	ND	64.9								
50%	ND	ND	ND	65.2								
60%	ND	ND	ND	65.5								
70%	ND	ND	ND	65.5								
80%	ND	ND	ND	65.5								
90%	ND	ND	ND	65.5								
100%	ND	ND	ND	66.2								

SMOLTIFICATION (MARCH - JUNE)[2]

Percentages	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0%			ND	63.6	62.4	65.5						
10%			ND	63.8	64.9	66.8						
20%			ND	64.3	66.2	67.4						
30%			ND	64.8	66.8	68.0						
40%			ND	64.9	68.0	68.0						
50%			ND	65.2	68.0	68.7						
60%			ND	65.5	69.3	68.7						
70%			ND	65.5	69.9	69.3						
80%			ND	65.5	70.5	69.9						
90%			ND	65.5	71.8	70.5						
100%			ND	66.2	74.3	71.8						

SUMMER REARING (JULY - OCTOBER)[2]

Percentages	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0%							66.2	66.2	65.5	59.2		
10%							67.4	67.4	66.8	60.5		
20%							68.0	68.0	67.4	61.1		
30%							68.7	68.7	67.4	61.8		
40%							68.7	68.7	68.0	62.4		
50%							69.3	69.3	68.0	63.0		
60%							69.3	69.3	68.7	63.6		
70%							69.9	69.9	68.7	64.3		
80%							70.5	69.9	69.3	64.9		
90%							70.5	70.5	69.3	67.4		
100%							71.8	72.4	71.2	68.7		

Notes: Temperature data collected by SCVWD during 1996 and 1997.

[1] Percentage of time that temperature is less than stated value. Data collected at 1-hour intervals.

[2] Lifestages may be present during months where data are not shown, however, focus of analysis is on those months when temperatures are typically limiting.

Legend:

#°F (boxed)	Suboptimal Water Temperatures	#°F (shaded)	Lethal Water Temperatures
#°F	Optimal Water Temperatures	ND	No Data

TABLE1A-8. Measured Water Temperature Ranges[1] (°F) in the Guadalupe River at I-880 and Temperature Thresholds for Important Steelhead Life Stages

This table shows the range of measured water temperatures in the Guadalupe River during the spawning, smoltification, and rearing periods for steelhead. It also indicates the percentage of time that water temperatures are optimal, suboptimal, and lethal during these periods.

SPAWNING (JANUARY - APRIL)[2]

Percentages	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0%	48.4	52.9	ND	66.2								
10%	51.6	54.2	ND	67.8								
20%	52.3	55.5	ND	68.1								
30%	52.9	55.5	ND	69.0								
40%	52.9	56.1	ND	69.3								
50%	53.6	56.7	ND	69.6								
60%	53.6	56.7	ND	70.6								
70%	54.2	56.7	ND	70.9								
80%	54.2	57.4	ND	71.8								
90%	56.1	58.0	ND	72.1								
100%	59.9	60.5	ND	72.5								

SMOLTIFICATION (MARCH - JUNE)[2]

Percentages	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0%			ND	66.2	59.9	64.3						
10%			ND	67.8	63.7	65.6						
20%			ND	68.1	64.9	66.2						
30%			ND	69.0	65.6	66.8						
40%			ND	69.3	66.2	67.5						
50%			ND	69.6	67.5	68.1						
60%			ND	70.6	68.1	68.7						
70%			ND	70.9	68.7	69.3						
80%			ND	71.8	69.3	70.6						
90%			ND	72.1	70.8	71.2						
100%			ND	72.5	75.0	75.0						

SUMMER REARING (JULY - OCTOBER)[2]

Percentages	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0%							64.9	65.6	63.0	56.7		
10%							67.5	67.5	65.0	59.3		
20%							68.1	68.1	66.2	61.2		
30%							68.7	68.7	66.8	63.0		
40%							69.3	69.3	66.9	63.7		
50%							70.0	70.0	67.5	64.3		
60%							70.6	70.6	68.1	64.9		
70%							71.2	71.2	68.7	65.6		
80%							72.5	71.8	69.3	66.8		
90%							73.1	72.5	70.0	67.5		
100%							75.6	75.6	72.5	71.8		

Note:

[1] Percentage of time that temperature is less than stated value. Data collected at 1-hour intervals.

[2] Lifestages may be present during months where data are not shown, however, focus of analysis is on those months when temperatures are typically limiting.

Legend:

#°F (boxed)	Suboptimal Water Temperatures	#°F (shaded)	Lethal Water Temperatures	Available Data: Sep 15 - Oct 12, 1995
#°F	Optimal Water Temperatures	ND	No Data	Apr 30 - Dec 31, 1996
				Jan 1 - Feb 24, May 5 - Nov 18, 1997

TABLE1A-9. Measured Water Temperature Ranges[1] (°F) in the Guadalupe River at Montague Expressway and Temperature Thresholds for Important Steelhead Life Stages

This table shows the range of measured water temperatures in the Guadalupe River during the spawning, smoltification, and rearing periods for steelhead. It also indicates the percentage of time that water temperatures are optimal, suboptimal, and lethal during these periods.

SPAWNING (JANUARY - APRIL)[2]

Percentages	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0%	51.7	51.1	51.7	49.1								
10%	54.3	53.8	54.9	56.2								
20%	54.9	56.8	56.2	58.1								
30%	55.6	58.1	56.8	59.4								
40%	55.6	58.7	57.5	60.0								
50%	56.2	58.7	58.1	61.3								
60%	56.8	59.4	58.7	62.5								
70%	56.8	60.0	60.0	63.8								
80%	57.5	60.6	60.6	65.7								
90%	58.1	61.9	61.9	68.2								
100%	61.9	65.0	65.0	76.4								

SMOLTIFICATION (MARCH - JUNE)[2]

Percentages	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0%			51.7	49.1	53.0	63.8						
10%			54.9	56.2	62.5	65.7						
20%			56.2	58.1	64.4	66.9						
30%			56.8	59.4	66.3	68.2						
40%			57.5	60.0	68.2	69.4						
50%			58.1	61.3	69.4	70.1						
60%			58.7	62.5	70.7	71.3						
70%			60.0	63.8	71.9	72.6						
80%			60.6	65.7	73.2	74.5						
90%			61.9	68.2	75.8	75.1						
100%			65.0	76.4	81.6	79.6						

SUMMER REARING (JULY - OCTOBER)[2]

Percentages	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0%							65.0	66.3	64.4	59.4		
10%							67.6	67.6	65.7	60.6		
20%							68.2	68.2	65.7	61.9		
30%							68.8	68.8	66.9	63.1		
40%							69.4	69.4	67.6	64.4		
50%							70.7	70.7	68.2	65.7		
60%							72.6	71.3	68.8	66.3		
70%							73.8	72.6	70.1	66.9		
80%							75.1	73.8	71.3	68.6		
90%							76.4	74.5	72.6	70.7		
100%							79.6	77.7	75.1	74.5		

Notes: Temperature data collected by SCVWD during 1996 and 1997.

[1] Percentage of time that temperature is less than stated value. Data collected at 1-hour intervals.

[2] Lifestages may be present during months where data are not shown, however, focus of analysis is on those months when temperatures are typically limiting.

Legend:

#°F	Suboptimal Water Temperatures	#°F	Lethal Water Temperatures
#°F	Optimal Water Temperatures	ND	No Data

TABLE1A-10. Measured Water Temperature Ranges[1] (°F) in the Guadalupe River at the Alamitos Drop Structure and Associated Water Temperature Needs for Important Chinook Life Stages

This table shows the range of measured water temperatures in the Guadalupe River during the prespawning, spawning, and rearing periods for chinook salmon. It also indicates the percentage of time that water temperatures are optimal, suboptimal, and lethal during these periods.

PRESPAWNING (SEPTEMBER - DECEMBER)[2]

Percentages	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0%									66.9	60.5	63.6	ND
10%									69.4	61.7	64.3	ND
20%									70.5	63.6	64.3	ND
30%									71.2	64.3	64.3	ND
40%									71.8	64.9	64.3	ND
50%									72.4	65.5	64.9	ND
60%									72.4	66.1	64.9	ND
70%									73.0	67.6	64.9	ND
80%									78.3	68.5	65.5	ND
90%									80.3	69.4	65.5	ND
100%									82.2	71.8	66.1	ND

SPAWNING (OCTOBER - JANUARY)[2]

Percentages	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0%	49.8									60.5	63.6	ND
10%	51.1									61.7	64.3	ND
20%	51.7									63.6	64.3	ND
30%	51.8									64.3	64.3	ND
40%	52.3									64.9	64.3	ND
50%	53.0									65.5	64.9	ND
60%	53.0									66.1	64.9	ND
70%	53.0									67.6	64.9	ND
80%	53.6									68.5	65.5	ND
90%	53.6									69.4	65.5	ND
100%	54.9									71.8	66.1	ND

REARING (FEBRUARY - JUNE)[2]

Percentages	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0%		50.4	51.7	46.0	42.7	49.7						
10%		52.3	54.3	57.4	57.2	59.2						
20%		53.6	54.9	58.7	61.2	66.1						
30%		54.9	55.9	60.0	65.0	71.3						
40%		55.8	56.8	60.6	66.9	72.6						
50%		56.8	57.4	61.9	68.2	73.2						
60%		57.4	58.1	63.1	69.4	73.8						
70%		58.1	58.7	64.4	70.7	74.5						
80%		58.7	60.0	66.3	73.2	75.1						
90%		59.3	60.6	68.9	77.5	76.4						
100%		61.9	65.0	76.4	97.6	86.9						

Notes: Temperature data collected by SCVWD during 1996 and 1997.

[1] Percentage of time that temperature is less than stated value. Data collected at 1-hour intervals.

[2] Lifestages may be present during months where data are not shown, however, focus of analysis is on those months when temperatures are typically limiting.

Legend:

#°F (boxed)	Suboptimal Water Temperatures	#°F (shaded)	Lethal Water Temperatures
#°F	Optimal Water Temperatures	ND	No Data

TABLE1A-11. Measured Water Temperature Ranges[1] (°F) in the Guadalupe River at Branham Lane and Temperature Thresholds for Important Chinook Salmon Life Stages

This table shows the range of measured water temperatures in the Guadalupe River during the prespawning, spawning, and rearing periods for chinook salmon. It also indicates the percentage of time that water temperatures are optimal, suboptimal, and lethal during these periods.

PRESPAWNING (SEPTEMBER - DECEMBER)[2]

Percentages	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0%									67.4	59.2	59.2	ND
10%									69.3	62.4	61.7	ND
20%									70.5	63.6	62.4	ND
30%									71.2	64.3	63.0	ND
40%									71.8	64.9	63.6	ND
50%									72.4	65.5	64.3	ND
60%									73.0	66.1	64.9	ND
70%									73.8	66.8	65.5	ND
80%									75.1	68.0	66.1	ND
90%									77.1	69.3	66.8	ND
100%									83.5	73.7	68.7	ND

SPAWNING (OCTOBER - JANUARY)[2]

Percentages	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0%	49.8									59.2	59.2	ND
10%	51.1									62.4	61.7	ND
20%	51.7									63.6	62.4	ND
30%	52.4									64.3	63.0	ND
40%	53.0									64.9	63.6	ND
50%	53.0									65.5	64.3	ND
60%	53.6									66.1	64.9	ND
70%	53.6									66.8	65.5	ND
80%	54.3									68.0	66.1	ND
90%	54.9									69.3	66.8	ND
100%	55.6									73.7	68.7	ND

REARING (FEBRUARY - JUNE)[2]

Percentages	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0%		51.1	52.4	54.3	56.2	64.4						
10%		52.4	54.9	57.5	63.8	66.9						
20%		53.6	55.6	59.4	65.0	68.0						
30%		54.9	56.2	60.0	66.8	68.8						
40%		56.2	56.8	61.3	68.2	69.9						
50%		56.8	57.5	62.5	69.4	71.3						
60%		57.5	58.1	63.8	71.2	73.0						
70%		58.1	59.4	65.0	72.6	75.0						
80%		58.7	60.0	66.9	74.3	76.9						
90%		60.0	61.3	70.1	76.4	79.0						
100%		63.1	66.3	77.1	82.0	84.2						

Notes: Temperature data collected by SCVWD during 1996 and 1997.

[1] Percentage of time that temperature is less than stated value. Data collected at 1-hour intervals.

[2] Lifestages may be present during months where data are not shown, however, focus of analysis is on those months when temperatures are typically limiting.

Legend:

#°F (boxed)	Suboptimal Water Temperatures	#°F (shaded)	Lethal Water Temperatures
#°F	Optimal Water Temperatures	ND	No Data

TABLE1A-12. Measured Water Temperature Ranges[1] (°F) in the Guadalupe River at Reach 10B (Stream Gage 23B) and Temperature Thresholds for Important Chinook Salmon Life Stages

This table shows the range of measured water temperatures in the Guadalupe River during the prespawning, spawning, and rearing periods for chinook salmon. It also indicates the percentage of time that water temperatures are optimal, suboptimal, and lethal during these periods.

PRESPAWNING (SEPTEMBER - DECEMBER)[2]

Percentages	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0%									65.1	54.9	**51.1**	**49.1**
10%									67.6	59.3	54.9	**51.1**
20%									68.8	60.6	56.2	**51.7**
30%									69.5	61.9	56.8	**52.4**
40%									70.1	64.4	57.5	**53.0**
50%									71.3	65.7	58.1	54.3
60%									72.0	66.3	58.7	55.6
70%									72.6	67.6	59.4	56.8
80%									73.2	69.5	60.0	57.5
90%									74.5	70.7	60.6	58.1
100%									80.3	74.5	61.3	61.3

SPAWNING (OCTOBER - JANUARY)[2]

Percentages	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0%	**49.8**									**54.9**	**51.1**	**49.1**
10%	**51.7**									59.3	**54.9**	**51.1**
20%	**52.4**									60.6	**56.2**	**51.7**
30%	**53.0**									61.9	**56.8**	**52.4**
40%	**53.6**									64.4	57.5	**53.0**
50%	**53.6**									65.7	58.1	**54.3**
60%	**54.3**									66.3	58.7	**55.6**
70%	**54.9**									67.6	59.4	**56.8**
80%	**55.6**									69.5	60.0	57.5
90%	57.5									70.7	60.6	58.1
100%	60.0									74.5	61.3	61.3

REARING (FEBRUARY - JUNE)[2]

Percentages	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0%		**52.4**	**53.0**	**54.9**	**56.8**	66.3						
10%		**54.3**	**55.6**	**59.4**	65.1	70.1						
20%		**55.6**	**56.8**	**61.3**	66.9	70.7						
30%		**55.6**	**57.5**	**62.5**	68.8	71.3						
40%		**56.2**	**58.1**	**63.8**	70.1	72.0						
50%		**56.2**	**59.4**	65.1	70.7	72.6						
60%		**56.8**	**60.6**	66.3	72.0	73.2						
70%		**57.5**	**61.9**	68.2	73.2	73.9						
80%		**58.1**	65.1	69.5	74.5	75.2						
90%		**59.4**	66.3	70.7	76.4	76.1						
100%		**63.2**	70.1	74.5	81.6	79.0						

Notes: Temperature data collected by SCVWD during 1996 and 1997.

[1] Percentage of time that temperature is less than stated value. Data collected at 1-hour intervals.

[2] Lifestages may be present during months where data are not shown, however, focus of analysis is on those months when temperatures are typically limiting.

Legend:

#°F	Suboptimal Water Temperatures	#°F	Lethal Water Temperatures
#°F	Optimal Water Temperatures	ND	No Data

TABLE1A-13. Measured Water Temperature Ranges[1] (°F) in the Guadalupe River just Upstream of the Guadalupe - Los Gatos Confluence and Temperature Thresholds for Important Chinook Salmon Life Stages

This table shows the range of measured water temperatures in the Guadalupe River during the prespawning, spawning, and rearing periods for chinook salmon. It also indicates the percentage of time that water temperatures are optimal, suboptimal, and lethal during these periods.

PRESPAWNING (SEPTEMBER - DECEMBER)[2]

Percentages	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0%									65.5	59.2	56.1	ND
10%									66.8	60.5	58.0	ND
20%									67.4	61.1	59.2	ND
30%									67.4	61.8	59.9	ND
40%									68.0	62.4	60.5	ND
50%									68.0	63.0	61.1	ND
60%									68.7	63.6	62.4	ND
70%									68.7	64.3	63.0	ND
80%									69.3	64.9	63.6	ND
90%									69.3	67.4	63.6	ND
100%									71.2	68.7	65.5	ND

SPAWNING (OCTOBER - JANUARY)[2]

Percentages	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0%	ND									59.2	56.1	ND
10%	ND									60.5	58.0	ND
20%	ND									61.1	59.2	ND
30%	ND									61.8	59.9	ND
40%	ND									62.4	60.5	ND
50%	ND									63.0	61.1	ND
60%	ND									63.6	62.4	ND
70%	ND									64.3	63.0	ND
80%	ND									64.9	63.6	ND
90%	ND									67.4	63.6	ND
100%	ND									68.7	65.5	ND

REARING (FEBRUARY - JUNE)[2]

Percentages	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0%		ND	ND	63.6	62.4	65.5						
10%		ND	ND	63.8	64.9	66.8						
20%		ND	ND	64.3	66.2	67.4						
30%		ND	ND	64.8	66.8	68.0						
40%		ND	ND	64.9	68.0	68.0						
50%		ND	ND	65.2	68.0	68.7						
60%		ND	ND	65.5	69.3	68.7						
70%		ND	ND	65.5	69.9	69.3						
80%		ND	ND	65.5	70.5	69.9						
90%		ND	ND	65.5	71.8	70.5						
100%		ND	ND	66.2	74.3	71.8						

Notes: Temperature data collected by SCVWD during 1996 and 1997.

[1] Percentage of time that temperature is less than stated value. Data collected at 1-hour intervals.

[2] Lifestages may be present during months where data are not shown, however, focus of analysis is on those months when temperatures are typically limiting.

Legend:

#°F (boxed)	Suboptimal Water Temperatures	#°F (shaded)	Lethal Water Temperatures
#°F	Optimal Water Temperatures	ND	No Data

TABLE1A-14. Measured Water Temperature Ranges[1] (°F) in the Guadalupe River at I-880 and Temperature Thresholds for Important Chinook Salmon Life Stages

This table shows the range of measured water temperatures in the Guadalupe River during the prespawning, spawning, and rearing periods for chinook salmon. It also indicates the percentage of time that water temperatures are optimal, suboptimal, and lethal during these periods.

PRESPAWNING (SEPTEMBER - DECEMBER)[2]

Percentages	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0%									63.0	56.7	54.2	49.7
10%									65.0	59.3	56.7	52.9
20%									66.2	61.2	57.4	54.8
30%									66.8	63.0	58.0	55.5
40%									66.9	63.7	58.6	56.7
50%									67.5	64.3	59.3	57.4
60%									68.1	64.9	59.9	58.0
70%									68.7	65.6	60.5	58.6
80%									69.3	66.8	61.8	59.3
90%									70.0	67.5	63.7	60.5
100%									72.5	71.8	66.8	69.3

SPAWNING (OCTOBER - JANUARY)[2]

Percentages	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0%	48.4									56.7	54.2	49.7
10%	51.6									59.3	56.7	52.9
20%	52.3									61.2	57.4	54.8
30%	52.9									63.0	58.0	55.5
40%	52.9									63.7	58.6	56.7
50%	53.6									64.3	59.3	57.4
60%	53.6									64.9	59.9	58.0
70%	54.2									65.6	60.5	58.6
80%	54.2									66.8	61.8	59.3
90%	56.1									67.5	63.7	60.5
100%	59.9									71.8	66.8	69.3

REARING (FEBRUARY - JUNE)[2]

Percentages	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0%		52.9	ND	66.2	59.9	64.3						
10%		54.2	ND	67.8	63.7	65.6						
20%		55.5	ND	68.1	64.9	66.2						
30%		55.5	ND	69.0	65.6	66.8						
40%		56.1	ND	69.3	66.2	67.5						
50%		56.7	ND	69.6	67.5	68.1						
60%		56.7	ND	70.6	68.1	68.7						
70%		56.7	ND	70.9	68.7	69.3						
80%		57.4	ND	71.8	69.3	70.6						
90%		58.0	ND	72.1	70.8	71.2						
100%		60.5	ND	72.5	75.0	75.0						

Note:

[1] Percentage of time that temperature is less than stated value. Data collected at 1-hour intervals.

[2] Lifestages may be present during months where data are not shown, however, focus of analysis is on those months when temperatures are typically limiting.

Legend:

#°F (boxed)	Suboptimal Water Temperatures	#°F (shaded)	Lethal Water Temperatures
#°F	Optimal Water Temperatures	ND	No Data

Available Data: Sep 15 - Oct 12, 1995
Apr 30 - Dec 31, 1996
Jan 1 - Feb 24, May 5 - Nov 18, 1997

TABLE1A-15. Measured Water Temperature Ranges[1] (°F) in the Guadalupe River at Montague Expressway and Temperature Thresholds for Important Chinook Salmon Life Stages

This table shows the range of measured water temperatures in the Guadalupe River during the prespawning, spawning, and rearing periods for chinook salmon. It also indicates the percentage of time that water temperatures are optimal, suboptimal, and lethal during these periods.

PRESPAWNING (SEPTEMBER - DECEMBER)[2]

Percentages	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0%									64.4	59.4	59.4	58.1
10%									65.7	60.6	61.9	58.7
20%									65.7	61.9	62.5	60.0
30%									66.9	63.1	63.1	60.6
40%									67.6	64.4	63.1	61.3
50%									68.2	65.7	63.8	61.9
60%									68.8	66.3	63.8	62.5
70%									70.1	66.9	64.4	63.1
80%									71.3	68.6	65.0	63.8
90%									72.6	70.7	65.0	63.8
100%									75.1	74.5	65.7	65.0

SPAWNING (OCTOBER - JANUARY)[2]

Percentages	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0%	51.7									59.4	59.4	58.1
10%	54.3									60.6	61.9	58.7
20%	54.9									61.9	62.5	60.0
30%	55.6									63.1	63.1	60.6
40%	55.6									64.4	63.1	61.3
50%	56.2									65.7	63.8	61.9
60%	56.8									66.3	63.8	62.5
70%	56.8									66.9	64.4	63.1
80%	57.5									68.6	65.0	63.8
90%	58.1									70.7	65.0	63.8
100%	61.9									74.5	65.7	65.0

REARING (FEBRUARY - JUNE)[2]

Percentages	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0%		51.1	51.7	49.1	53.0	63.8						
10%		53.8	54.9	56.2	62.5	65.7						
20%		56.8	56.2	58.1	64.4	66.9						
30%		58.1	56.8	59.4	66.3	68.2						
40%		58.7	57.5	60.0	68.2	69.4						
50%		58.7	58.1	61.3	69.4	70.1						
60%		59.4	58.7	62.5	70.7	71.3						
70%		60.0	60.0	63.8	71.9	72.6						
80%		60.6	60.6	65.7	73.2	74.5						
90%		61.9	61.9	68.2	75.8	75.1						
100%		65.0	65.0	76.4	81.6	79.6						

Notes: Temperature data collected by SCVWD during 1996 and 1997.

[1] Percentage of time that temperature is less than stated value. Data collected at 1-hour intervals.

[2] Lifestages may be present during months where data are not shown, however, focus of analysis is on those months when temperatures are typically limiting.

Legend:

#°F	Suboptimal Water Temperatures	#°F	Lethal Water Temperatures
#°F	Optimal Water Temperatures	ND	No Data

APPENDIX 1B

Fish Impact Assessment Methods

APPENDIX 1B

Fish Impact Assessment Methods

The potential effect of the Guadalupe River Project on fish is primarily related to change in habitat caused by construction activities. Habitat includes the resources and conditions in an area that allow an organism to survive, grow, and reproduce; this includes rearing habitat, spawning habitat, and migration pathways (Hall et al., 1997).

To complete the impact assessment, historical information on the fisheries resources of San Francisco Bay (Skinner, 1962) and the Guadalupe River was obtained from scientific literature (Leidy, 1984). Information on aquatic habitats and existing fishery resources of the Guadalupe River was obtained primarily from field surveys conducted by The Habitat Restoration Group and SCVWD fisheries biologists, CDFG and USFWS file data, and the Corps' Final Mitigation and Monitoring Plan (U.S. Army Corps of Engineers, 1992). SCVWD performed chinook salmon spawning and carcass surveys during the 1995–1996 migration and spawning season and observed juvenile chinook salmon in the upper Guadalupe River in March 1996. SCVWD also conducted salmonid smolt and adult migrant trapping operations below U.S. Highway 101 on the Guadalupe River during 1997–1999. Steelhead and chinook salmon smolts were captured during 1998 and 1999; a few young-of-the-year steelhead were captured in 1997. Adult steelhead were captured during 1998, and adult chinook salmon were captured during 1997–1999. Trapping efforts were limited to streamflows at or below approximately 70 cfs; therefore, trapping during high-flow events did not occur. However, even at flow less than 70 cfs, smolt trapping operations were not fully efficient because efforts to trap the entire width of the stream were unsuccessful (Salsbury, pers. comm.).

Project impacts on fish were assessed by comparing preproject and expected postproject fish habitat abundance and quality. The fisheries analysis bases the evaluation of effects related to hydrology and hydraulics on Section 5.1, "Hydrologic and Hydraulic Consequences." Determination of the effects on fisheries because of channel erosion and deposition and river geomorphology is based on Section 5.2, "Soils and River Geomorphology." The evaluation of the effects on fisheries from water temperature, suspended solids, and toxic constituents is based on Section 5.3, "Water Quality." Appendix 1C, "Thermal Effects on Life Stages of Steelhead and chinook Salmon," provides a more detailed description of the effects of water temperature on steelhead and chinook salmon in the Guadalupe River. The evaluation of SRA cover effects is based on Section 5.4, "Vegetation."

1B.1 Hydrology and Hydraulics

Hydrology and hydraulics, represented by flow, directly determine the area and volume of physical habitat for fish (Orth, 1987, Bain et al., 1988). Flow is a primary driving force within the riverine ecosystem, affecting a multitude of physical, chemical, and biological processes that operate in stream channels (Meyer et al., 1999). Flow that approximates the existing flow magnitude and pattern was assumed to maintain fish habitat for migration, spawning, and rearing in the Guadalupe River.

1B.2 Channel Erosion and Deposition

Erosion and deposition are critical to channel maintenance and gravel flushing, which are important processes that maintain fish habitat. Project effects on the flows necessary to maintain stream channel and gravel quality were identified (Milhous and Bovee, 1977, Rosgen et al., 1986). Effective discharge, the flow that just fills a nonincised channel to flood stage with an approximate recurrence interval of 1.5 years, determines the channel geometry and is responsible for transporting the largest part of the sediment load (Rosgen et al., 1986) (Figure 1B-1). Using the method described by Dunne and Leopold (1978) and streamflow data from stream gage Station 23B provided by SCVWD, an annual maximum flood series was constructed for water years 1971–1991 to determine the effective discharge. Effective discharge was then used as the threshold value for channel-maintenance and gravel-flushing flow.

1B.3 River Geomorphology

Geomorphic conditions, or channel form, support species movement and migration, and are important components of fish habitat. In the Guadalupe River, channel form, combined with flow conditions, directly affects the movement, spawning, and rearing of steelhead and chinook salmon. Channel form is also a critical component of rearing habitat. Riffles provide important fish spawning habitat and food-producing areas, primarily because flow velocity in riffles maintains gravel substrates. Pools are potentially important areas of refuge for cool water species, such as steelhead and chinook salmon, especially during warm months. Because of their depth, pools provide cover and moderate daily variability in water temperature. Stream reaches with a 1:1 ratio of pools to riffles are generally thought to provide optimum rearing conditions for juvenile chinook salmon and steelhead (Raleigh et al., 1984, 1986). Runs provide a generally intermediate habitat value between that of pools and riffles, depending on depth, flow velocity, and the resulting substrate conditions.

Expected changes in channel form were assessed relative to existing conditions. Project effects on spawning gravel were determined by comparing existing gravel abundance with the estimated change in abundance following construction of project elements. Loss in spawning gravel area was estimated for grading, channel widening, and channel armoring activities.

Project impacts on fish movement were assessed by identifying the occurrence and duration of physical or thermal barriers to migration in the Guadalupe River coincident with steelhead and chinook salmon migration periods (Figure 1B-2). Bypasses were considered potential barriers because they may strand fish as floodflows recede. Without modification, armored reaches were considered potential barriers when flow is low and depth is less than 0.6 foot (7.2 inches) needed for migration of steelhead and 0.8 foot (9.6 inches) needed by chinook salmon (Thompson, 1972). Temporary barriers installed during Project construction were also considered in the analysis. Steelhead and chinook salmon may avoid moving through habitats with water temperatures greater than about 66 to 75 °F, depending on the species present and its life stage (Table 1B-1). Potential thermal barriers were identified from the water temperature simulation.

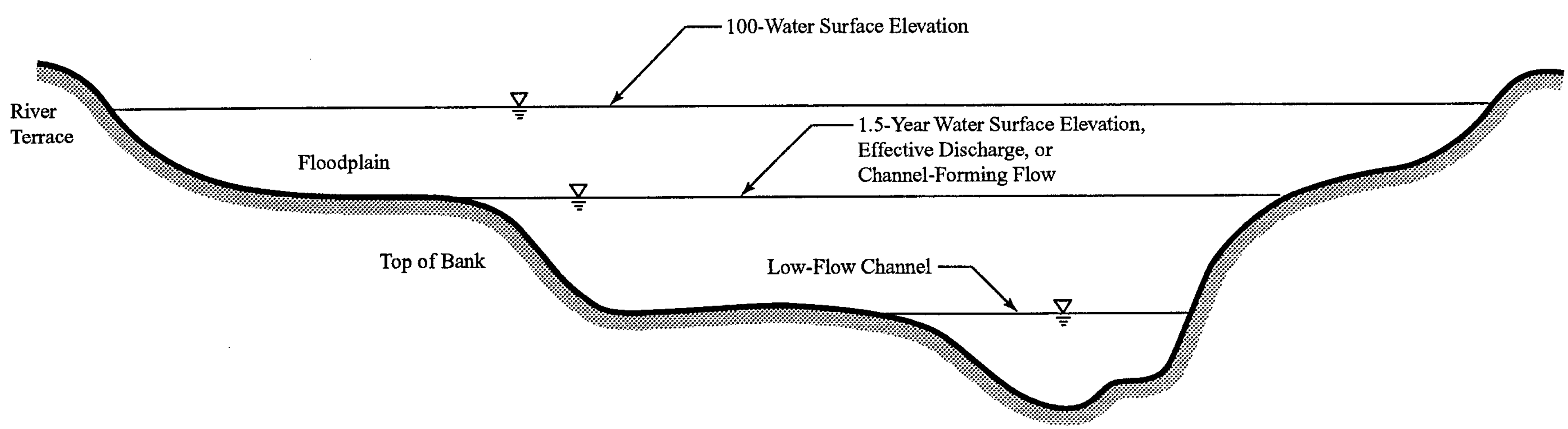
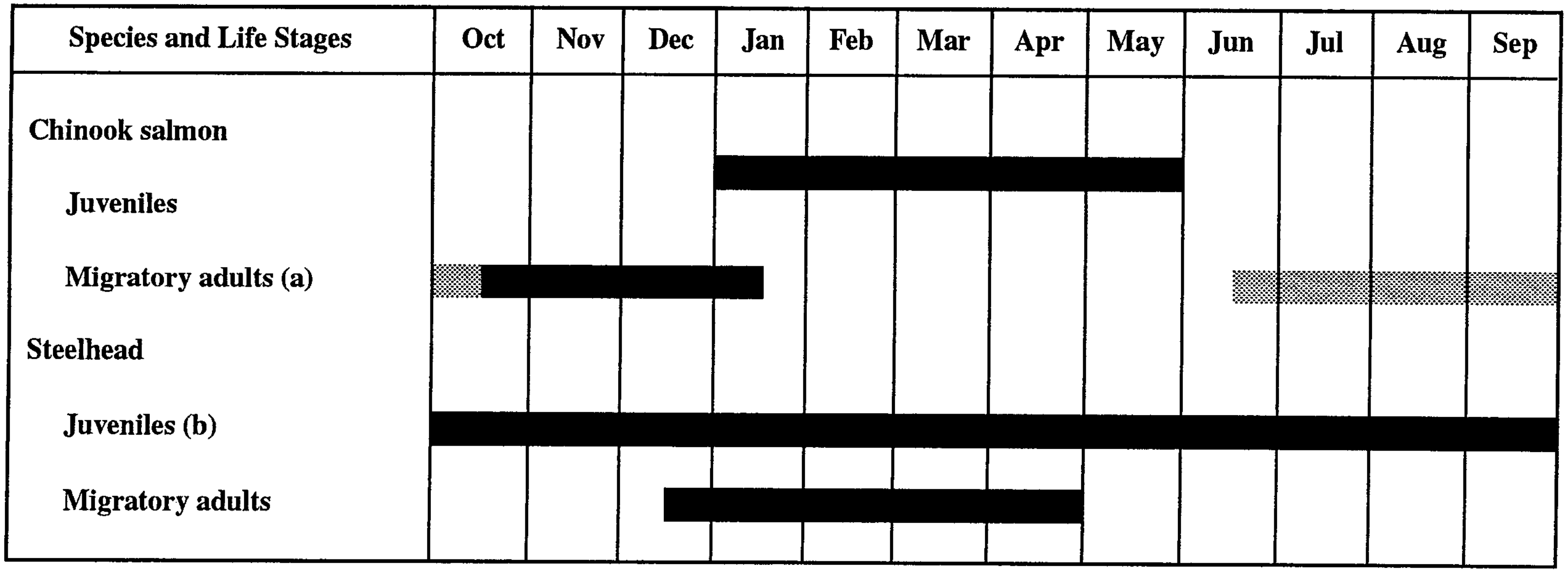


Figure 1B-1. Typical River Channel Cross Section



(a) the primary migration period for adult chinook salmon in the Guadalupe River usually occurs after October 15, but is dependent on flow and water temperature conditions.

(b) it has not been determined whether juvenile steelhead rear your round in the Guadalupe River.

Source: Shapovalov and Taft 1954, White 1993, Moyle 1976.

Figure 1B-2. Approximate Temporal Occurrence of Chinook Salmon and Steelhead in the Guadalupe River

TABLE 1B-1. Temperature Requirements (°F) for Life Stages of Chinook Salmon and Steelhead during the Months Present in the Guadalupe River

Life Stage	Chinook Salmon	Steelhead
Prespawning Adults	August - December	November - April
Optimal	46.4 - 53.6	44.0 - 57.0
Suboptimal	53.6 - 75.2	57.0 - 65.0
Unacceptable	>75.2	>65.0
Egg Incubation	October - March	January - May
Optimal	41.0 - 57.2	44.6 - 53.6
Suboptimal	57.2 - 60.8	53.6 - 60.8
Lethal	>60.8	>60.8
Juvenile Rearing	January - June	All Months
Optimal	53.6 - 64.4	53.6 - 64.4
Suboptimal	64.4 - 75.2	64.4 - 77.0
Lethal	>75.2	>77.0
Juvenile Emigration	February - June	January - July
Optimal	53.6 - 64.4	44.6 - 59.9
Suboptimal	64.4 - 75.2	59.9 - 66.2
Unacceptable	>75.2	>66.2

Sources: Raleigh et al. 1984, 1986, Rich 1987, Shapovalov and Taft 1954, Moyle 1976.

1B.4 Water Temperature

Water temperature affects many physical, chemical, and biological processes. Water temperatures in the Guadalupe River are critical to steelhead and chinook salmon. These species generally require cool water to survive and propagate. During each life stage, however, steelhead and chinook salmon have different physiological responses to water temperature conditions. These responses may result in chronic and sublethal effects, such as suppressed development and growth rates, or there may be acute effects that result in the loss of equilibrium and, ultimately, result in death. Salmonid thermal tolerance varies during each life stage according to a number of factors, including the acclimation temperature, the absolute exposure temperature, the duration of exposure to elevated temperature, and the fish's overall health. Table 1B-1 presents the thermal requirements for life stages of steelhead and chinook salmon based on information from the published literature (Raleigh et al., 1984, 1986, Rich, 1987). Increased frequency or magnitude of sublethal or lethal temperatures is considered to adversely affect steelhead and chinook salmon.

The effect of water temperature on fish is estimated by water temperature suitability indices. A water temperature suitability index (SI) is a unitless number between 0 and 1 that indicates the effect of water temperature on fish according to species and life stage (Fris,

1993, U.S. Fish and Wildlife Service, 1992). Zero indicates the species would not survive (i.e., the temperature effects would be lethal or prevent the completion of a step in the life cycle), and 1 indicates optimal conditions. Values assigned to suboptimal temperatures range from less than 1 to greater than 0 based on linear interpolation (Table 1B-2). For example, a water temperature of 70 °F would provide SI values of about 0.5 for juvenile steelhead, juvenile chinook salmon, and chinook salmon smolts; an SI value of 0.26 for adult chinook salmon; and SI values of 0 for chinook salmon eggs and steelhead smolts, adults, and eggs (Table 1B-2). The SI values are only estimates of general effects on fish. The exact response of the fish to particular water temperatures is variable. For instance, a temperature of 77 °F is expected to kill juvenile steelhead if they are exposed to that temperature for a significant duration, but they might survive if they have been acclimated to warm water and are only exposed to 77 °F temperatures for only an hour each day.

The effects of estimated temperature changes on fish were evaluated using two methods. One method of analysis uses temperature thresholds (Table 1B-1). In the threshold analysis, monthly average and average maximum simulated temperatures were compared to temperature thresholds. In the second method of analysis, SI scores were used to estimate suitability units. The suitability unit calculation uses SI scores for hourly temperatures to generate a single number that indicates project area habitat quality for each month.

1B.5 Temperature Simulations

Construction of the Guadalupe River Project would remove riparian vegetation and alter channel geometry, thereby affecting thermal conditions for anadromous fish in the river. Water temperature was simulated using the JSATEMP model. Meteorological conditions, flow, and channel characteristics (e.g., shade and water depth) were used to estimate water temperature in 39 segments of the Guadalupe River system. Figure 1B-3 shows a map of the temperature model segments. The temperature analysis in this report focuses on the four areas expected to have project-related temperature changes: Segment 3 (model segments 30 to 34), Segments 1 and 2 (model segments 35 to 37), Guadalupe Creek (model segments 5 and 6), and Reach A (model segment 38) (Figure 1B-3).

The temperature model performance was evaluated by comparing simulated temperatures for 1996 and 1997 conditions with those measured in 1996 and 1997 by SCVWD. The temperature model performed well; it was able to match the measured diurnal, daily, and seasonal changes in temperature as well as the longitudinal differences in temperature along the length of the Guadalupe River. Additional information about model assumptions and calibration is presented in the preliminary report on the water temperature simulations (U.S. Army Corps of Engineers, 2000d).

To analyze temperature effects, water temperatures were simulated for two types of years, a dry/median year and a wet year. These two types of years were chosen to account for the range of conditions that may occur in the Guadalupe River. 1995 flows were used to simulate the wet year. Relatively low flow values for November through April were used to simulate the dry/median year. For May through September, median flow values were used for the dry/median year because a flow of 0 cfs would have been required to represent dry

TABLE 1B-2. Habitat Suitability Indices for Water Temperature Effects on All Life Stages of Steelhead and Chinook Salmon

Water Temperature (°F)	Habitat Suitability Indices							
	Steelhead				Chinook Salmon			
	Juvenile	Smolt	Adult	Eggs	Juvenile	Smolt	Adult	Eggs
53	1	1	1	1	1	1	1	1
54	1	1	1	0.88	1	1	0.96	1
55	1	1	1	0.75	1	1	0.91	1
56	1	1	1	0.63	1	1	0.87	1
57	1	1	1	0.5	1	1	0.83	1
58	1	1	0.88	0.38	1	1	0.78	0.75
59	1	1	0.75	0.25	1	1	0.74	0.5
60	1	1	0.63	0.13	1	1	0.7	0.25
61	1	0.86	0.5	0	1	1	0.65	0
62	1	0.69	0.38	0	1	1	0.61	0
63	1	0.52	0.25	0	1	1	0.57	0
64	1	0.36	0.13	0	1	1	0.52	0
65	0.92	0.19	0	0	0.92	0.92	0.48	0
66	0.85	0.02	0	0	0.83	0.83	0.43	0
67	0.77	0	0	0	0.75	0.75	0.39	0
68	0.69	0	0	0	0.67	0.67	0.35	0
69	0.62	0	0	0	0.58	0.58	0.3	0
70	0.54	0	0	0	0.5	0.5	0.26	0
71	0.46	0	0	0	0.42	0.42	0.22	0
72	0.38	0	0	0	0.33	0.33	0.17	0
73	0.31	0	0	0	0.25	0.25	0.13	0
74	0.23	0	0	0	0.17	0.17	0.09	0
75	0.15	0	0	0	0.08	0.08	0.04	0
76	0.08	0	0	0	0	0	0	0
77	0	0	0	0	0	0	0	0

years. The flashboard diversion dams MOU (MOU # 0228-97) between SCVWD and CDFG (Santa Clara Valley Water District and California Department of Fish and Game, 1997) requires that the release from the Alamitos drop structure on the Guadalupe River maintain a minimum of 1 cfs, as measured at stream gage Station 23B, when the flashboards are in place.

Therefore, 1 cfs was assumed for those locations affected by the 1-cfs rule described in the MOU in the simulated dry/median year. Meteorological conditions used in the water temperature simulation were based on 1994 and 1995 hourly data measured at the California Irrigation Management Information System (CIMIS) station at the San Jose International Airport (located near Reach A) in San Jose.

Temperature was simulated for preproject, postproject, and postmitigation conditions. Preproject conditions are those before any construction. Postproject conditions are those immediately after the construction of the project, and postmitigation conditions are those after mitigation plantings have reached maturity, assumed to occur 40 years after planting.

The simulated temperatures for preproject conditions do not match measured temperatures because the flow and meteorological conditions used in the simulations are different from those present during a particular measurement period. Furthermore, most of the temperatures presented in this report represent averages of multiple temperature model segments and should not be compared to temperatures measured at particular spots along the river.

1B.5.1 Evaluation of Simulated Temperatures Relative to Temperature Thresholds for Fish

Thermal effects were evaluated for all adult, egg, juvenile, and smolt life stages of steelhead and chinook salmon. The thresholds evaluated were the upper level of optimum conditions and the lower level of lethal or unacceptable conditions (Table 1B-1). For this method, both average and average maximum temperatures from the dry/median and wet years were used. Including the monthly average maximum temperatures (i.e., average of the daily maximums) in the analysis allows for the evaluation of some of the worst expected conditions to be experienced by the fish. For the evaluation of whether simulated temperatures will cross a threshold, only simulated temperature increases of more than 1 °F are described. Measured changes of less than 1 °F are expected to have minimal effects on fish considering model accuracy and natural temperature variation.

The prediction that water temperature will exceed a threshold does not necessarily mean that water temperature throughout the model segment is above that threshold. Water temperature within a segment can vary as a result of factors such as stratification of deep pools and the influence of local groundwater. Furthermore, fish such as juvenile steelhead have the ability to seek out areas of lower water temperature (if available) and avoid unacceptable water temperatures. Thermal thresholds referenced in this report are based on published laboratory studies where water temperature was held constant. In reality, water temperatures typically fluctuate on a daily basis; therefore, small increases in a predicted temperature that cause a thermal threshold to be crossed in a specific reach indicate potential effects on fish but should not be interpreted as causing an entire fish population to be eliminated from that reach. Instead, the use of thermal thresholds for determining fisheries effects should be used in combination with the estimated temperature increases to indicate when and where temperature problems may occur and to estimate the potential benefits of conservation measures.

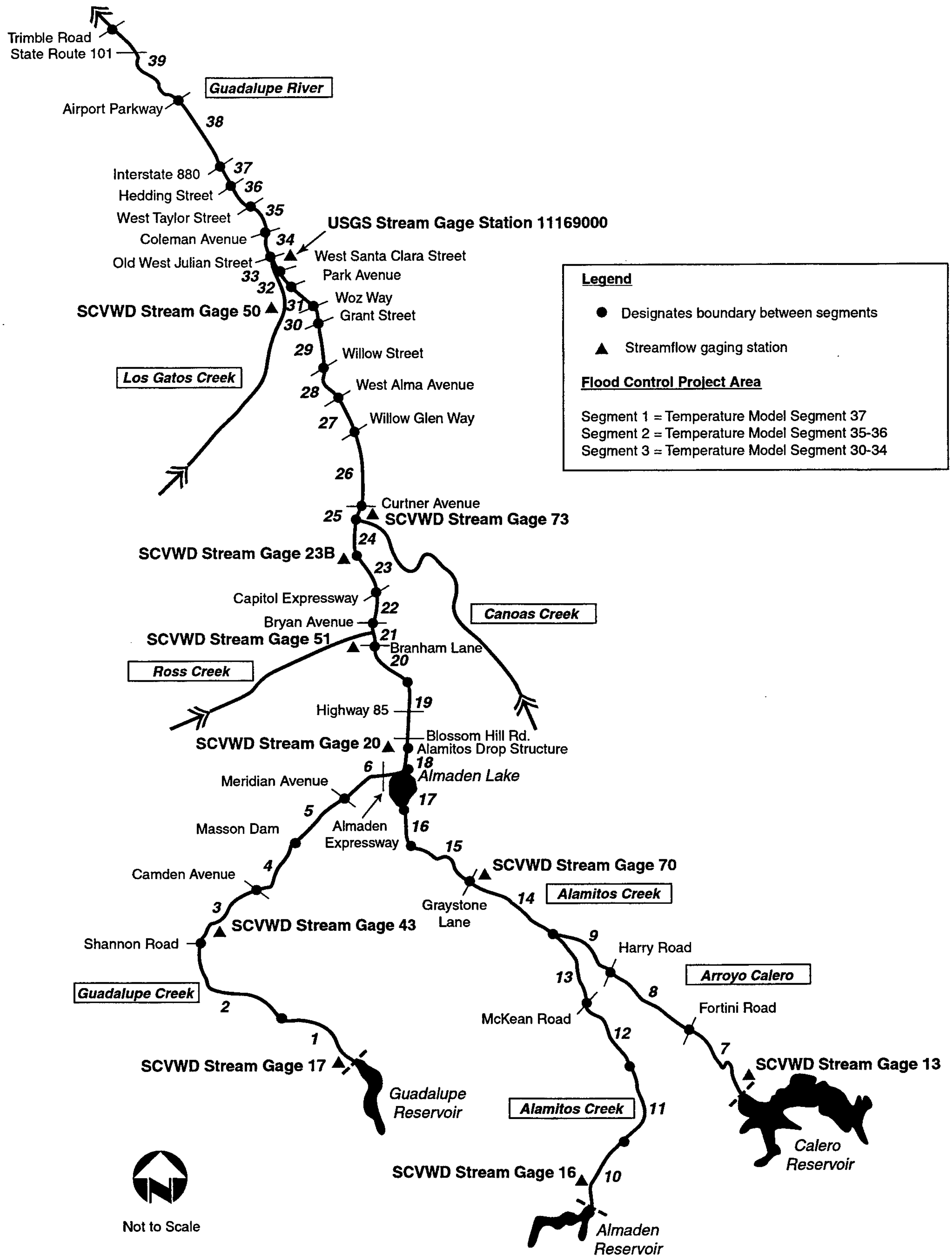


Figure 1B-3. Schematic Diagram of Segments Used in the Guadalupe River Temperature Model

1B.5.2 Thermal Suitability Units

A second method used to evaluate temperature effects was to calculate thermal suitability units for the dry/median year. To illustrate project effects and to determine the likely success of conservation measures, total thermal suitability units in all stream segments affected by the project were calculated for all life stages of steelhead and chinook salmon. The dry/median year was used for this analysis because simulated project-related temperature effects for the dry/median year were greater than for the wet year.

Monthly thermal suitability units are the products of habitat area multiplied by a suitability index for water temperature:

Thermal Suitability Units = Habitat Area X Suitability Index

Habitat area is the surface area capable of providing direct life support for the species and life stage of concern.

Thermal suitability units provide a common measure that allows an overall evaluation of gains in some stream segments relative to losses in other segments. The thermal suitability unit evaluation calculates an average value based on hourly water temperatures from the dry/median year and is therefore an indicator of general conditions.

Total suitability units are the sum of the monthly average thermal suitability units for all stream segments affected by changes in water temperature. The monthly average suitability unit for each stream segment is the product of the monthly average SI value and the segment area. The segment area is the product of segment length multiplied by monthly width. Monthly width is the average for preproject channel geometry and median flow conditions for each month.

A monthly average SI value is calculated for each stream segment affected by the project. SI values are assigned to each simulated hourly water temperature based on water temperature needs of the species and life stage (Table 1B-2). For a given stream segment, the average of all hourly SI values for the month is the monthly average SI value (Figure 1B-4).

For example, segment 36 is 2,006 feet long and averages 42.3 feet wide under median flow conditions for August as measured at the USGS gage. The segment area is calculated to equal 1.95 acres (2,006 feet X 42.3 feet / 43,560 sf per acre). Simulated hourly water temperatures for the month of August range from 63 °F to 74 °F under preproject conditions, with a median value of 68 °F. Using Table 1B-2, SI values corresponding to the needs of juvenile steelhead range from 1.0 at 63 °F to 0.23 at 74 °F, with a median value of 0.69. The monthly average SI value, the average of hourly SI values for the month of August, is 0.66. The monthly average suitability unit calculated for segment 36 is 1.29 (0.66 SI value X 1.95 acres). The monthly average suitability unit for segment 36 is summed with suitability units for all other project-affected segments to arrive at 8.00 total suitability units for juvenile steelhead in August of a median/dry year under preproject conditions.

1B.6 Shaded Riverine Aquatic Cover

Two elements of SRA cover were assessed for the analysis. Overhead SRA cover consists of overhanging riparian vegetation that is important for stream shading, leaf litter, and insect

input. Instream SRA cover consists of submerged woody material (e.g., exposed roots, branches, and trunks); aquatic plants; gravel, cobble, and boulder substrates; and undercut banks (U.S. Fish and Wildlife Service, 1992). The removal of SRA cover could adversely affect fish habitat by exposing fish to predators, reducing the availability of resting areas, and reducing the abundance of aquatic food organisms.

Impacts on rearing habitat structure were assessed by comparing preproject and postproject SRA cover conditions. Impacts on overhead SRA cover were estimated as expected changes in the linear feet of riparian habitat. Instream SRA cover was estimated as expected changes in linear feet of natural channel; that is, channel armoring was assumed to remove instream cover.

1B.7 Suspended Solids and Toxic Constituents

Reduced reproductive success, reduced growth, or mortality occurs when poor water quality stresses the metabolic tolerances of an organism. Assessment of water quality relationships addresses the effects of contaminants on individuals or their habitat. Contaminants include toxic substances, such as metals, petroleum products, pesticides, fertilizers, and sewage, and uncharacteristically high sediment loading. Beneficial effects on steelhead and chinook salmon would be achieved primarily by reducing input of contaminants. Implementation of best management practices during construction activities would prevent short-term discharge of contaminants, reduce the probability of contaminant spills, and prevent short-term increases in fine sediment input that may have adverse effects on aquatic communities through increased sedimentation or turbidity. Best management practices would be incorporated into a storm water pollution prevention plan and a toxic materials control and spill response plan as part of NPDES requirements. NPDES permits typically govern construction activities such as grading, revegetation, and recontouring of disturbed areas; require the construction and operation of sediment catch basins; and govern the handling of onsite hazardous materials such as fuel, oil, lubricants, and construction-related materials, such as concrete. The intent of NPDES permits is to reduce the potential for sediments and hazardous materials to enter waterways.

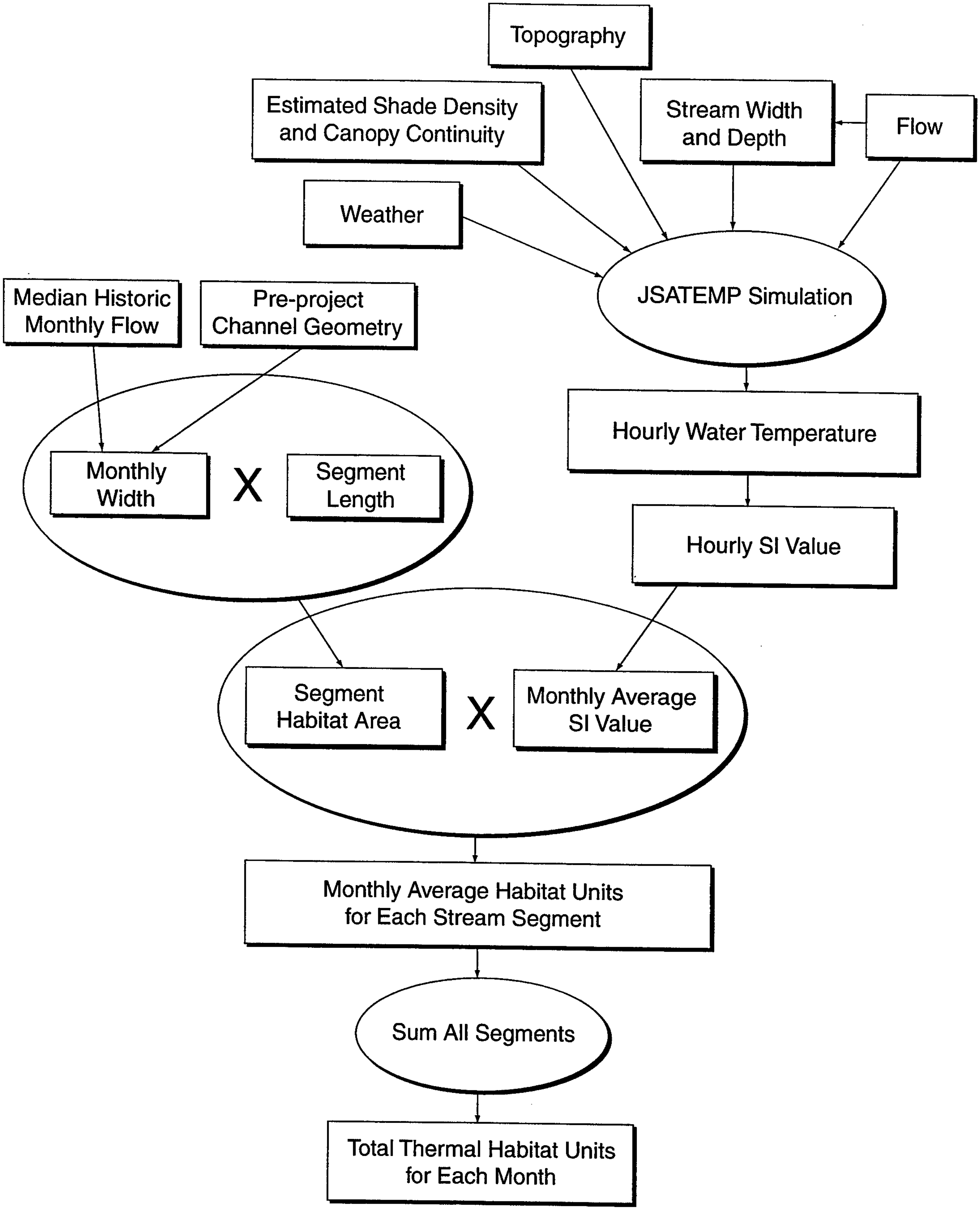


Figure 1B-4. Calculation of Total Thermal Habitat Units

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APPENDIX 1C

Thermal Effects on Life Stages of Steelhead and Chinook Salmon

APPENDIX 1C

Thermal Effects on Life Stages of Steelhead and Chinook Salmon

1C.1 Thermal Effects on Life Stages

The water temperature assessment focuses on steelhead and chinook salmon because their survival is sensitive to water temperature changes and because current management efforts on the Guadalupe River focus on these two species. To evaluate potential thermal effects on steelhead and chinook salmon, simulated temperatures were compared to the temperature thresholds for each life stage (Appendix 1B). Total thermal suitability units were then calculated for each life stage (Appendix 1B). Total thermal suitability units represent the habitat area provided by water temperature conditions that will support growth and survival of a given life stage.

The Guadalupe River Project would cause water temperatures in the Guadalupe River to increase during April through October. The largest increase in water temperature occurs from June through September (Section 5.3, "Water Quality"). Removal of shaded riverine aquatic (SRA) cover vegetation and the subsequent loss of shade are the primary causes of increased water temperature (Section 5.4, "Biological Resources"). The Corps planted SRA cover vegetation onsite in the Guadalupe River Project area and will plant more as part of its environmental commitments. The Corps also will plant SRA vegetation offsite in Reach A and at the Guadalupe Creek mitigation site. In approximately 40 years, the mature vegetation will replace the lost shade and reestablish water temperatures consistent with preproject conditions (Section 5.3, "Water Quality").

The following text presents a more detailed description of thermal effects of the Guadalupe River Project on the life stages of steelhead and chinook salmon. The discussion addresses Segments 1, 2, and 3; Reach A; and Guadalupe Creek. The following life stages are addressed for each species:

- Prespawning adults: Adults are migrating from the ocean into the river and are ready to spawn
- Egg incubation: Eggs are incubating in the river gravel
- Juvenile rearing: Immature fish are feeding and growing
- Smoltification: Juvenile fish are outmigrating and undergoing the physiological changes that enable them to survive in salt water

1C.1.1 Prespawning Adult Steelhead

Water temperatures less than 57 °F provide optimal conditions for prespawning adult steelhead. Suboptimal temperatures for prespawning adult steelhead range from 57.0 °F to

65.0 °F. Temperatures greater than 65 °F are unsuitable. From November through April, when adults may be present in the river, the simulated average temperatures remain below the 65 °F unsuitable threshold (Figures 1C-1 through 1C-4).

Guadalupe River Project actions are expected to reduce habitat quality slightly for adult steelhead in March and April. Simulated average temperatures in Segments 1 and 2 cross the threshold from optimal conditions to suboptimal conditions during dry years (Figures 1C-1). Once SRA cover vegetation has matured, total thermal suitability units approach preproject levels (Figure 1C-5) and habitat conditions for adult steelhead will be similar to preproject conditions. Temperatures in Segments 1, 2, and 3 are expected to remain above preproject levels (Figures 1C-1 and 1C-2). Temperatures in Reach A and in lower Guadalupe Creek, however, will become more suitable for adult steelhead (Figures 1C-3 and 1C-4). Simulated average maximum temperatures drop below the 65 °F unsuitable threshold in April of the dry/median year in Reach A and in March and April of the dry/median year in lower Guadalupe Creek.

1C.1.2 Steelhead Egg Incubation

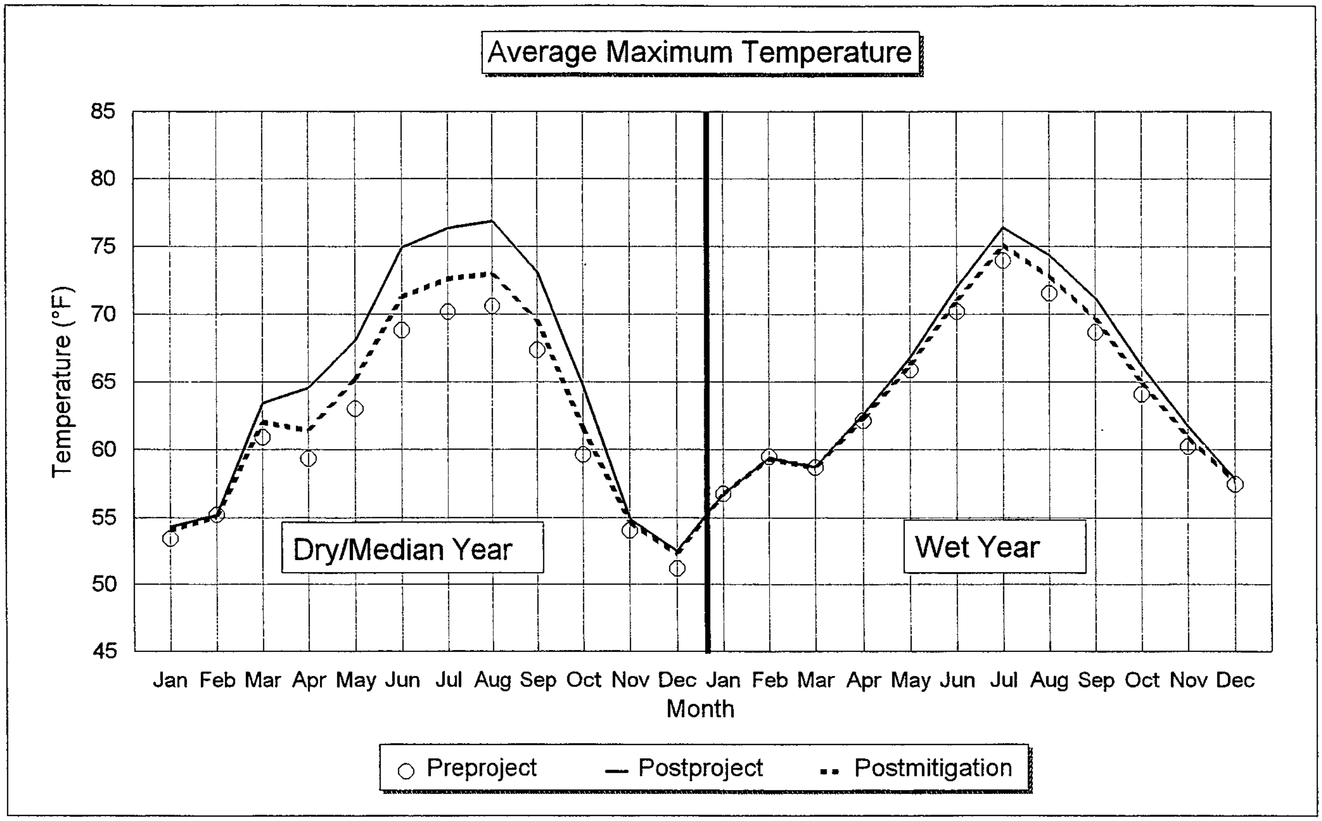
Water temperatures less than 53.6 °F provide optimal conditions for steelhead egg incubation, which occurs from January through June. Suboptimal temperatures for steelhead egg incubation range between 53.6 °F and 60.8 °F. Temperatures greater than 60.8 °F are considered lethal. During January and February, simulated average temperatures under preproject conditions fall in the optimal or suboptimal range (Figures 1C-1 through 1C-4). By March and April, temperatures are less suitable; simulated average temperatures occasionally exceed the lethal threshold of 60.8 °F. Simulated temperatures for preproject conditions during May and June are usually lethal to steelhead eggs.

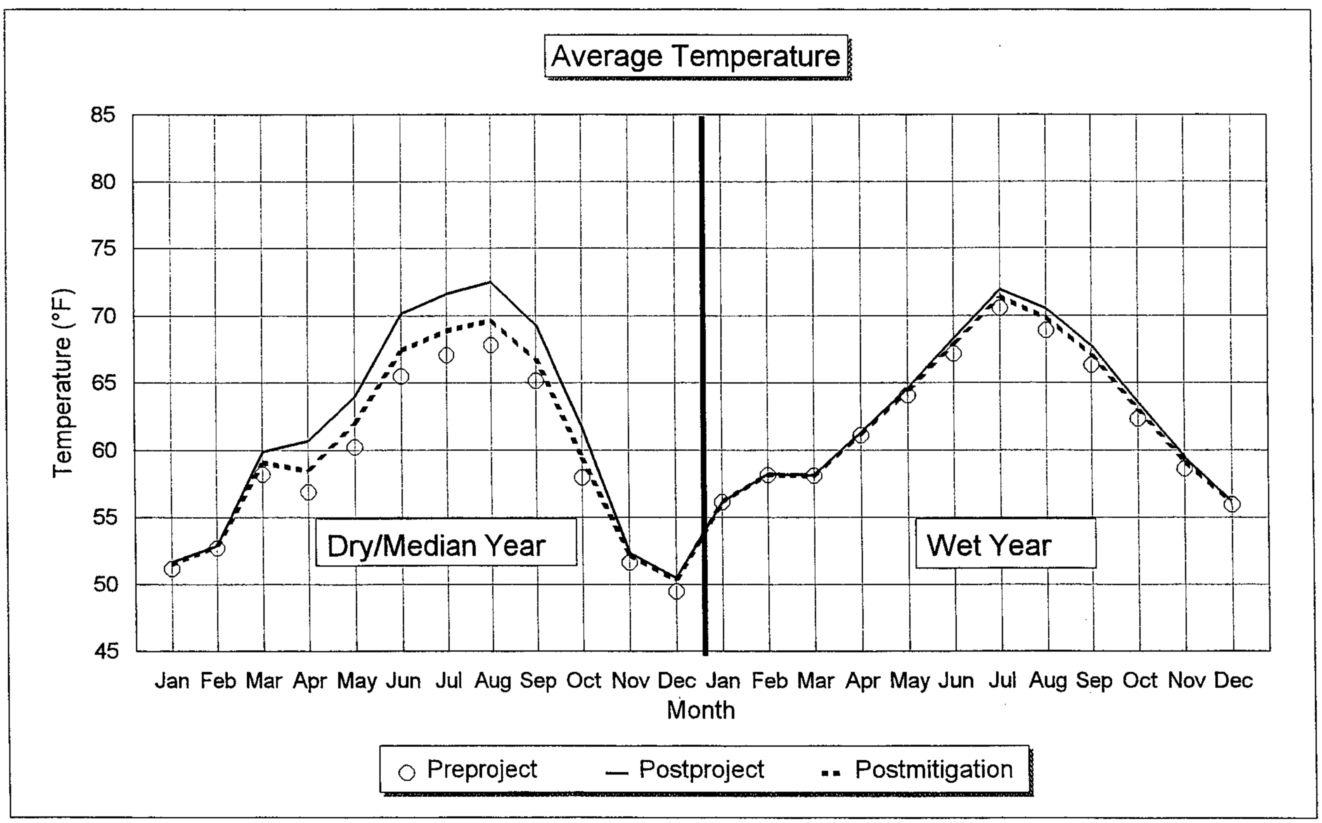
The Guadalupe River Project could slightly reduce the length of time in spring that steelhead eggs can incubate successfully. Based on preproject water temperatures, however, successful steelhead incubation is expected to occur only in January and February. Simulated preproject average maximum water temperatures exceed the lethal thermal limit of 60.8 °F during March of the dry/median year in Segments 1, 2, and 3 (Figures 1C-1 and 1C-2). Therefore, the slight increase in postproject temperature in March due to the Guadalupe River Project should minimally affect the population. Furthermore, incubation occurs in the gravel, where midday water temperatures tend to remain cooler. Steelhead eggs incubating in March are likely to have passed into the larval or juvenile stage; these stages are more tolerant of temperatures greater than 60.8 °F.

Thermal suitability units indicate that postmitigation temperature conditions for incubating steelhead will be similar to preproject conditions (Figure 1C-6). Maturation of SRA cover vegetation will increase shade and improve water temperature conditions in lower Guadalupe Creek. Simulated average temperatures in lower Guadalupe Creek drop below the 60.8 °F lethal threshold during April and May of the dry/median year and during June of the wet year (Figure 1C-4).

1C.1.3 Juvenile Steelhead Rearing

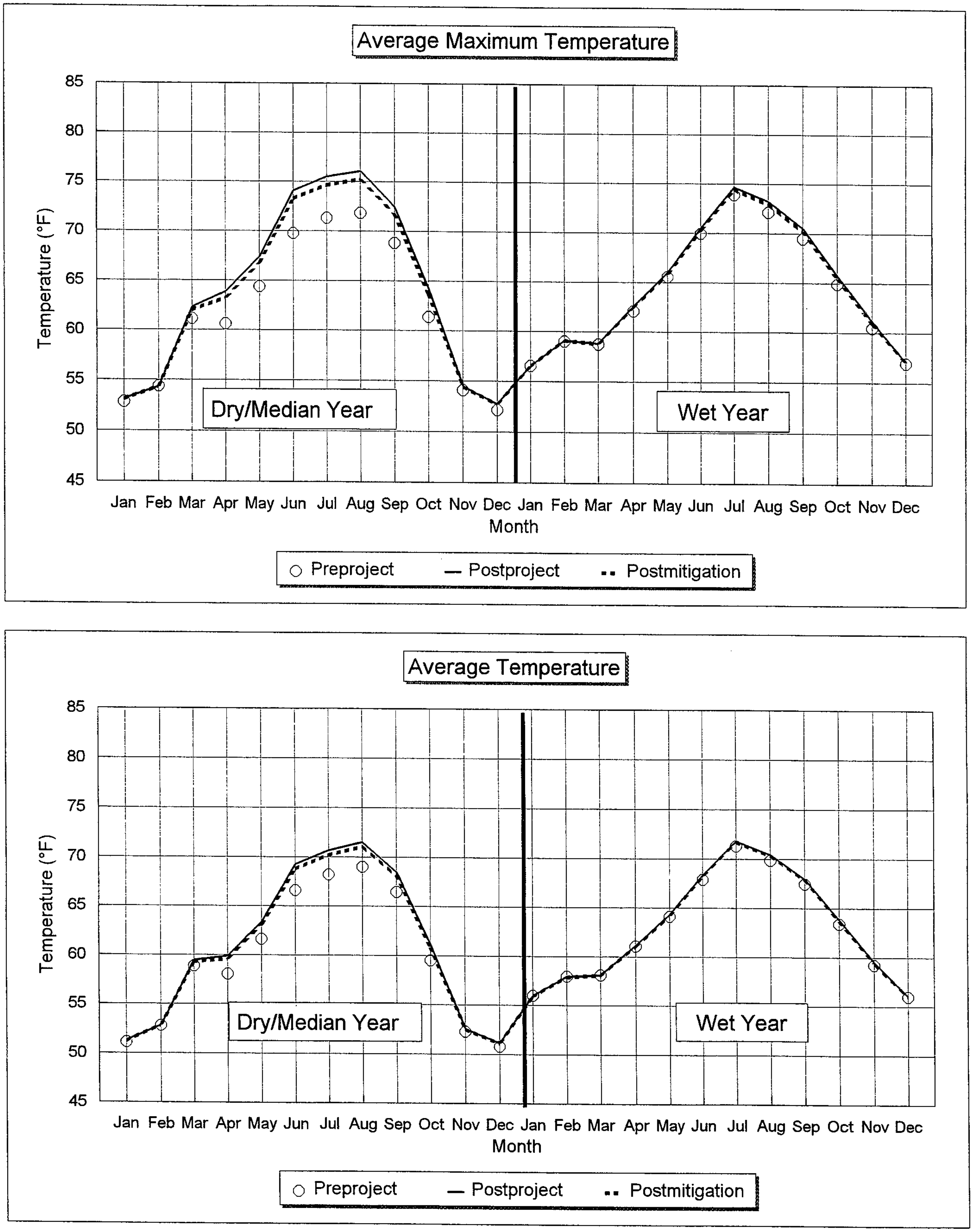
Juvenile steelhead may be present in the Guadalupe River all year. Water temperatures below 64.4 °F provide optimal conditions for juvenile steelhead rearing. Suboptimal temperatures for





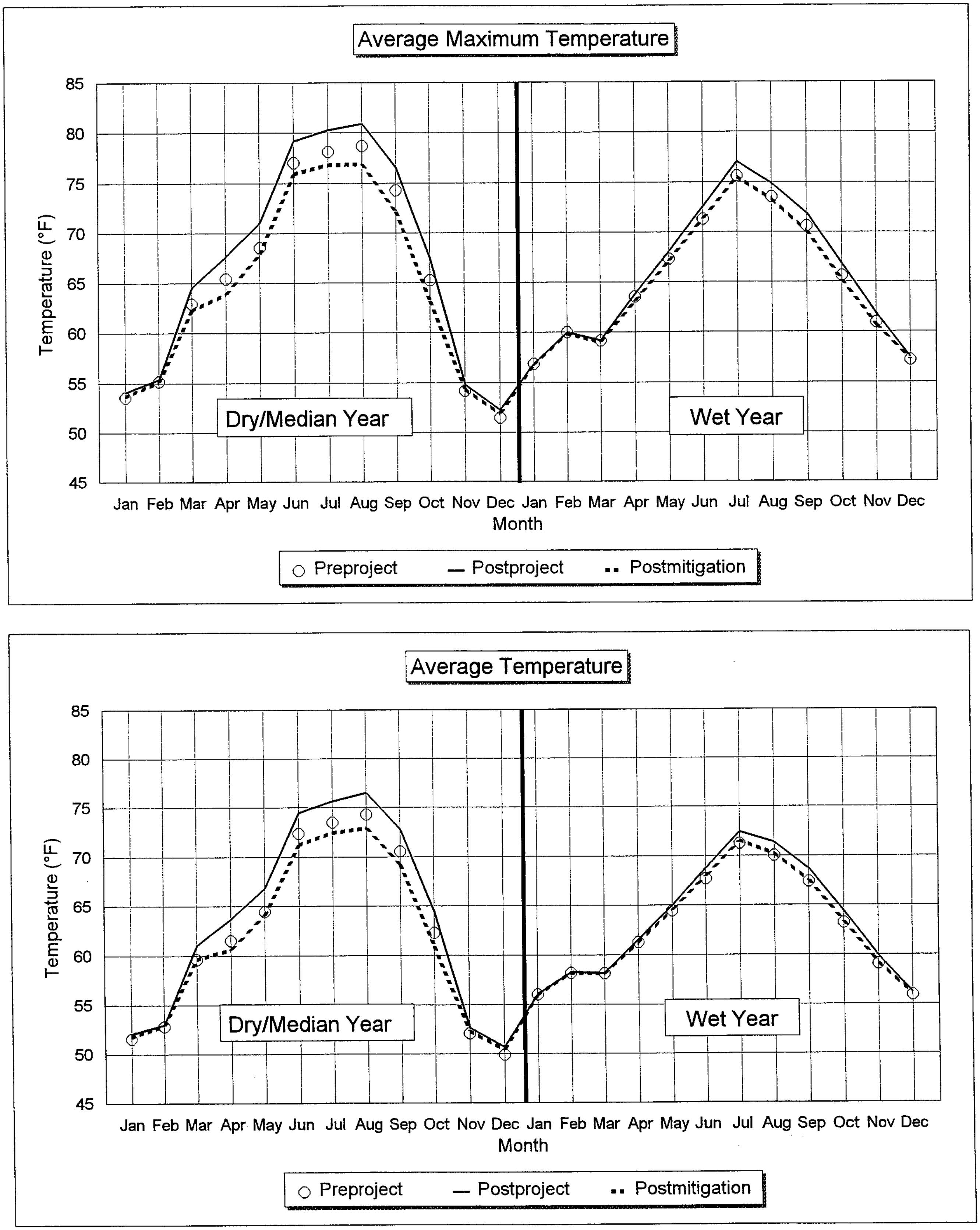
Preproject = 1990 conditions; Postproject = year 0 after construction; Postmitigation = year 40 after construction

Figure 1C-1. Simulated Temperatures in Segments 1 and 2 for the Guadalupe River Project with Proposed Action



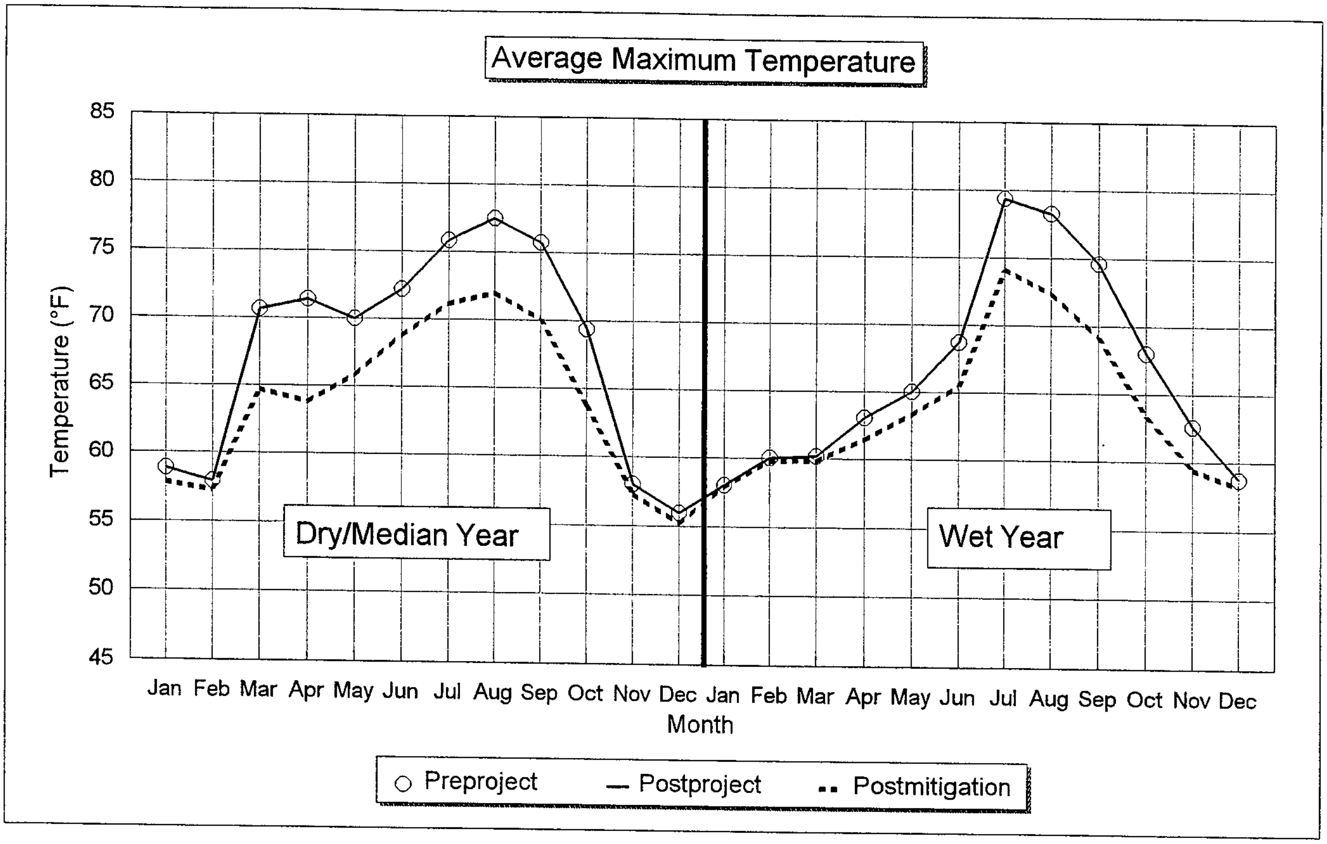
Preproject = 1990 conditions; Postproject = year 0 after construction; Postmitigation = year 40 after construction

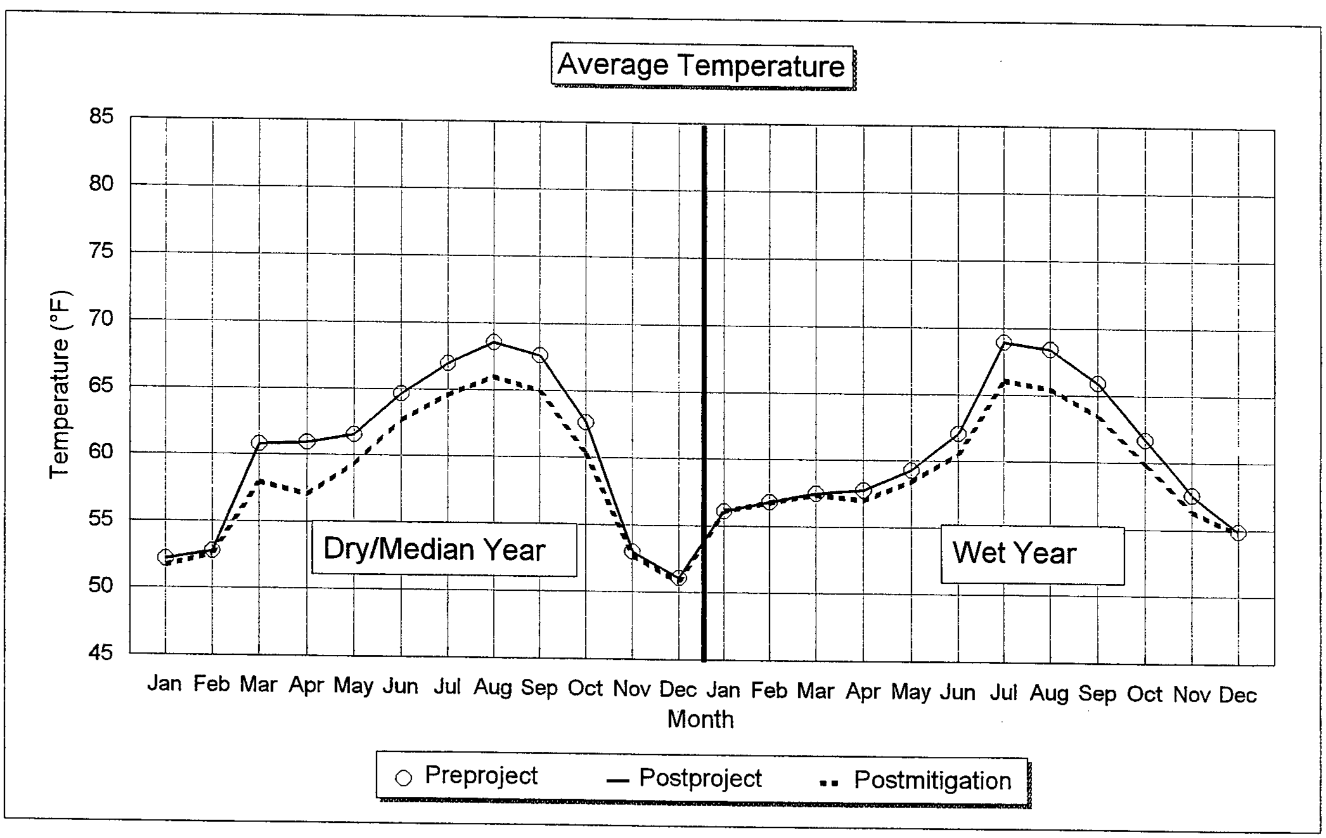
Figure 1C-2. Simulated Temperatures in Segment 3 for the Guadalupe River Project with Proposed Action



Preproject = 1990 conditions; Postproject = year 0 after construction; Postmitigation = year 40 after construction

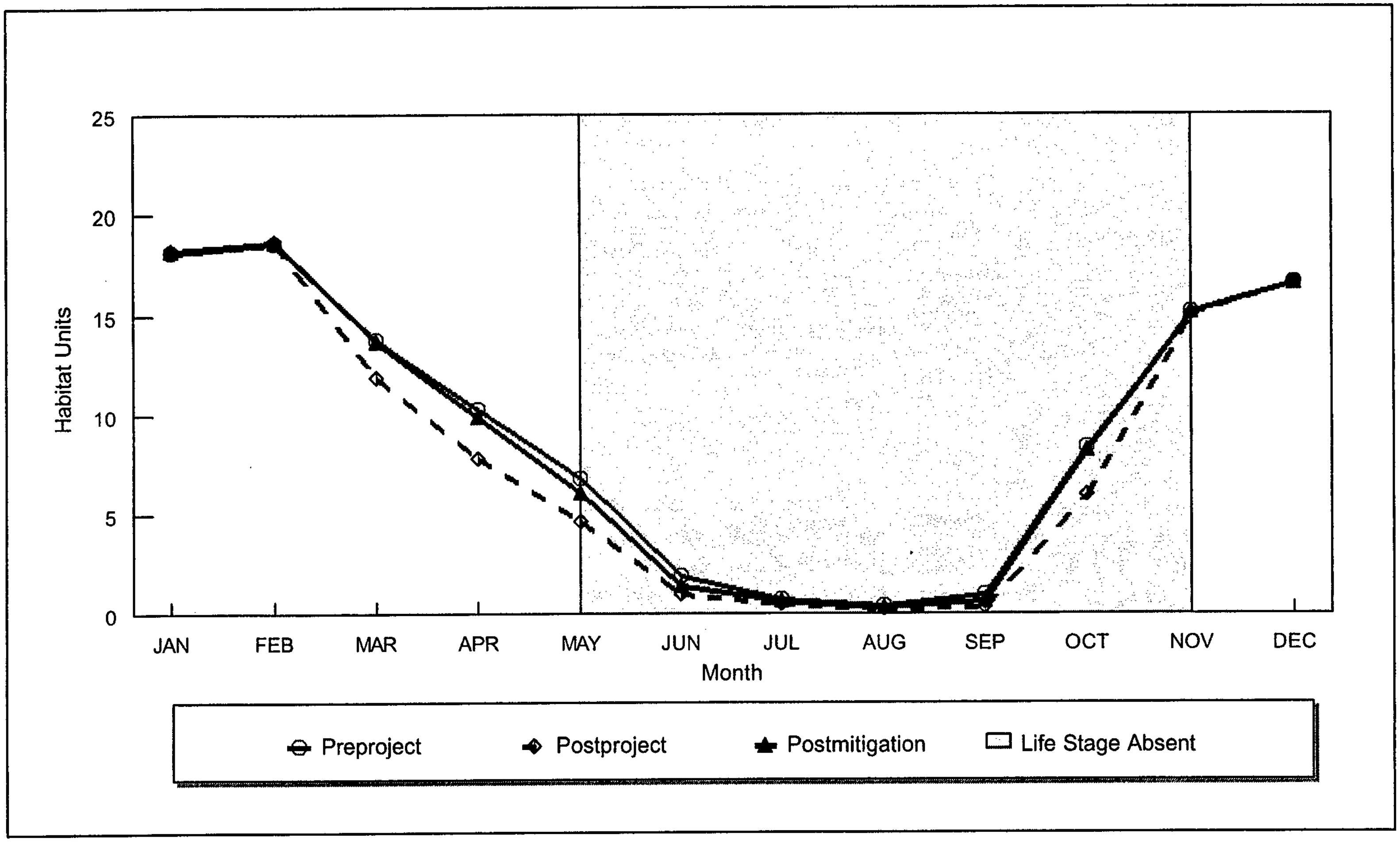
Figure 1C-3. Simulated Temperatures in Reach A for the Guadalupe River Project with Proposed Action





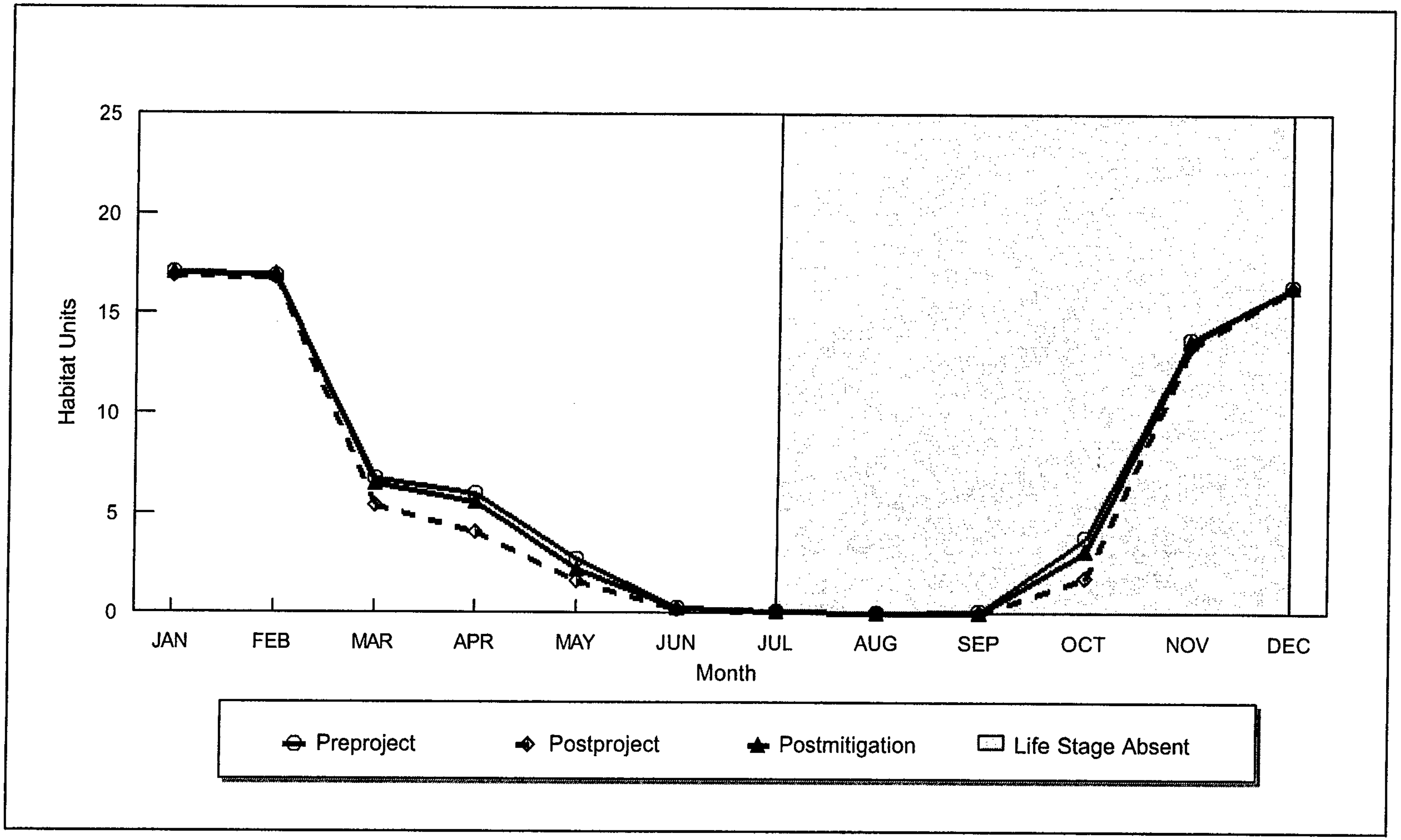
Preproject = 1990 conditions; Postproject = year 0 after construction; Postmitigation = year 40 after construction

Figure 1C-4. Simulated Temperatures in Guadalupe Creek for the Guadalupe River Project with Proposed Action



Preproject = 1990 conditions; Postproject = year 0 after construction; Postmitigation = year 40 after construction

Figure 1C-5. Total Thermal Suitability Units for Adult Steelhead Simulated for the Dry/Median Year in All Stream Segments Affected by the Guadalupe River Project with Proposed Action



Preproject = 1990 conditions; Postproject = year 0 after construction; Postmitigation = year 40 after construction

Figure 1C-6. Total Thermal Suitability Units for Steelhead Spawning and Incubation Simulated for the Dry/Median Year in All Stream Segments Affected by the Guadalupe River Project with Proposed Action

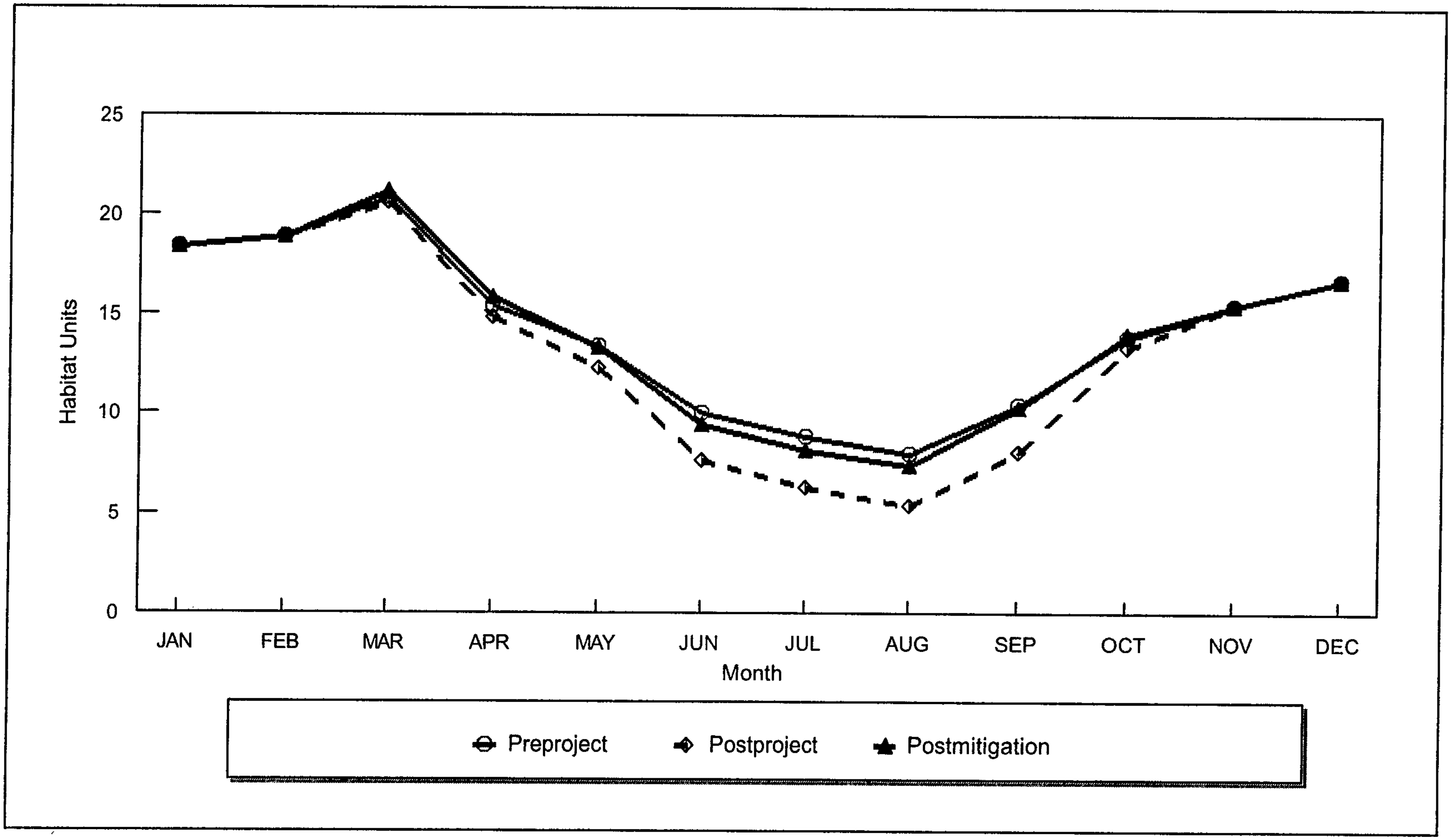
juvenile steelhead range between 64.4 °F and 77.0 °F. Temperatures above 77 °F are considered lethal. June through September is the most critical period for these fish. Simulated summer temperatures for preproject conditions exceed the 64.4 °F upper limit of optimal conditions (Figures 1C-1 through 1C-4). Simulated average maximum preproject temperatures in Segments 1, 2, and 3, however, are below the 77.0 °F lethal threshold. Simulated average maximum preproject temperatures in Reach A exceed 77.0 °F during summer of the dry/median year. Simulated average maximum preproject temperatures in lower Guadalupe Creek exceed 77.0 °F during summer of both dry/median and wet years. The Guadalupe River Project would cause water temperatures to exceed the optimal threshold (64.4 °F) for juvenile steelhead during spring and fall (Figures 1C-1 through 1C-4). Exceeding the threshold is expected to minimally affect juvenile survival because juvenile steelhead endure temperatures much warmer than 64.4 °F during summer months. The Guadalupe River Project also causes the simulated average maximum temperature to exceed the lethal threshold (77 °F) in July of wet years in Reach A. Because temperatures in Reach A are expected to exceed 77 °F under preproject conditions during June, July, and August of dry years, the temperature increase in July of wet years would have little additional effect on the survival of juvenile steelhead.

The Guadalupe River Project increased the simulated average maximum temperatures by as much as 4.3 °F and 6.3 °F in Segments 1, 2, and 3, respectively (Figures 1C-1 and 1C-2). Simulated postproject temperatures in these two areas are below the 77 °F lethal threshold during June through September, but the increase in water temperature would reduce habitat quality for juvenile steelhead rearing.

Although matured SRA cover vegetation would shade the river, simulated postmitigation water temperatures in Segments 1, 2, and 3 would be higher than preproject temperatures (Figures 1C-1 and 1C-2). Water temperatures in Reach A and in lower Guadalupe Creek, however, would be more suitable for steelhead rearing (Figures 1C-3 and 1C-4). Shade associated with the maturation of planted SRA cover vegetation is predicted to cause temperatures to drop toward optimal conditions in Reach A and in lower Guadalupe Creek. Simulated average maximum temperatures in Reach A are below 77 °F in August of the dry/median year and during July and August of the wet year. Simulated average maximum temperatures in lower Guadalupe Creek are below 77.0 °F during June, July, and August of the dry/median water year. Total postmitigation thermal suitability units for juvenile steelhead in the Guadalupe River approach preproject conditions (Figure 1C-7).

1C.1.4 Steelhead Smoltification

Steelhead smolt outmigrate between January and July. Water temperature over 55 °F appears to inhibit smoltification (Raleigh et al., 1984). Although Guadalupe River Project actions would increase water temperature in April and May, preproject and postproject water temperatures are generally greater than 55 °F by the end of February (Figures 1C-1 through 1C-4). Smolting would be expected prior to April or March. Therefore, the water temperature effects of the Guadalupe River Project would minimally affect steelhead smoltification. Water temperatures upstream and downstream from the Guadalupe River Project area—between Almaden Lake and Curtner Avenue and between Interstate 880 and Trimble Road, respectively—are higher than water temperatures in the project area during August (Section 5.3, "Water Quality") and other late



Preproject = 1990 conditions; Postproject = year 0 after construction; Postmitigation = year 40 after construction

Figure 1C-7. Total Thermal Suitability Units for Juvenile Steelhead Rearing Simulated for the Dry/Median Year in All Stream Segments Affected by the Guadalupe River Project with Proposed Action

spring and summer months (U.S. Army Corps of Engineers, 2000d). Therefore, increased water temperature caused by the Guadalupe River Project would not be critical to smolt movement. As SRA cover vegetation matures, water temperature conditions for smolt will improve (Figures 1C-1 through 1C-4). Water temperatures in Guadalupe Creek are expected to cool substantially, which potentially would improve conditions for smolting. Postmitigation total thermal suitability units for steelhead smolt in the Guadalupe River approach preproject conditions (Figure 1C-8).

1C.1.5 Prespawning Adult Chinook Salmon

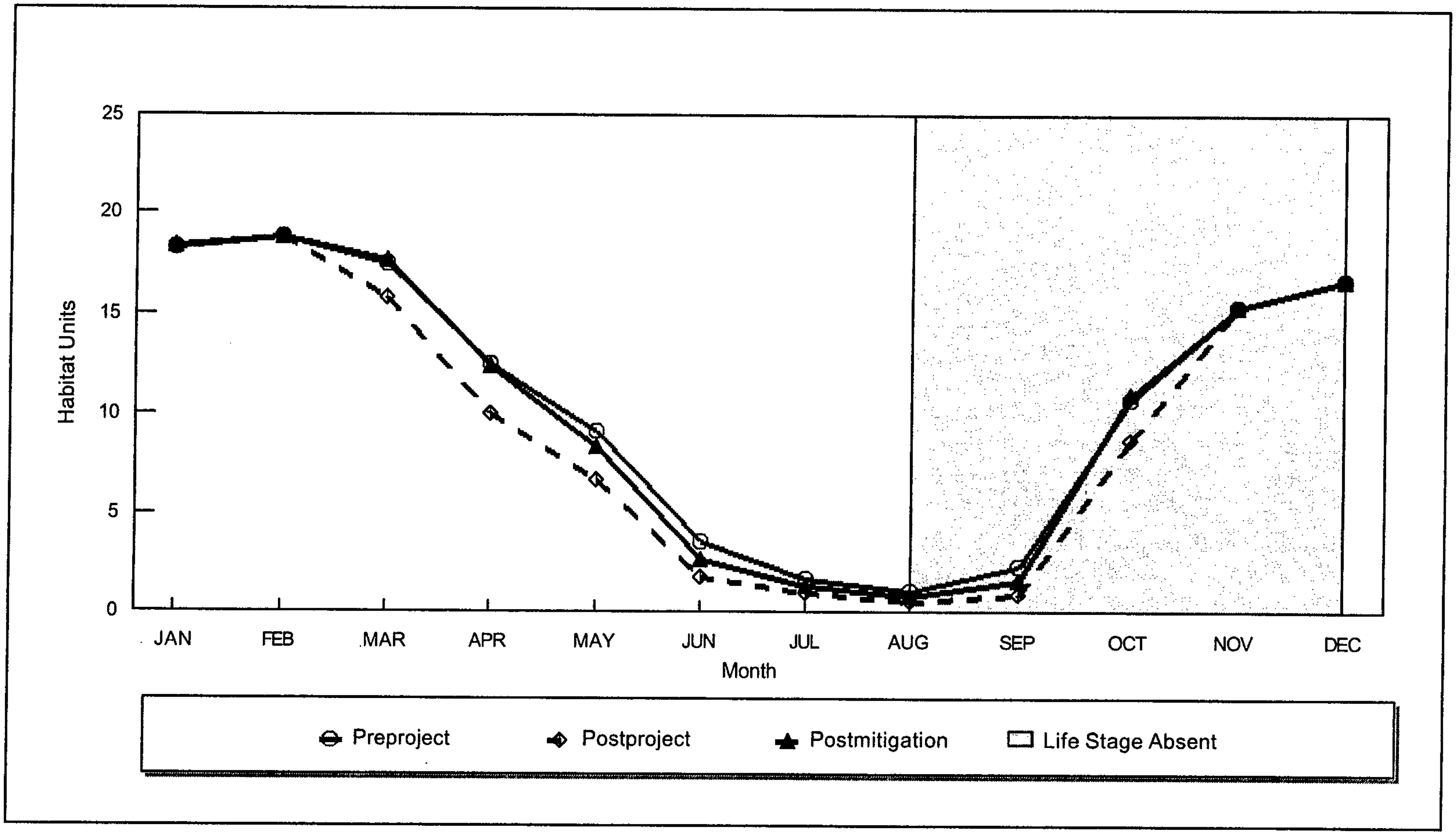
Optimal conditions for adult chinook salmon occur at water temperatures below 53.6 °F. Suboptimal temperatures for adult chinook salmon range between 53.6 °F and 75.2 °F. Water temperatures above 75.2 °F are considered unsuitable. Chinook salmon may be present from July through February, although their peak occurrence is from October to December. Under preproject conditions, simulated average maximum water temperature exceeds the optimal temperature of 53.6 °F during most months (Figures 1C-1 through 1C-4). Temperatures within the upper suboptimal range for adult chinook salmon are lethal for incubating eggs, which require temperatures below 60.8 °F. Consequently, adult chinook salmon would be unable to spawn successfully until after October. Spawning under preproject and postproject conditions would be successful later in fall, when water temperature is cooler and less affected by the Guadalupe River Project.

Maturation of SRA cover vegetation will reduce water temperatures below the 75 °F threshold. Postmitigation total thermal suitability units for adult chinook salmon in the Guadalupe River approach preproject conditions (Figure 1C-9).

1C.1.6 Chinook Salmon Egg Incubation

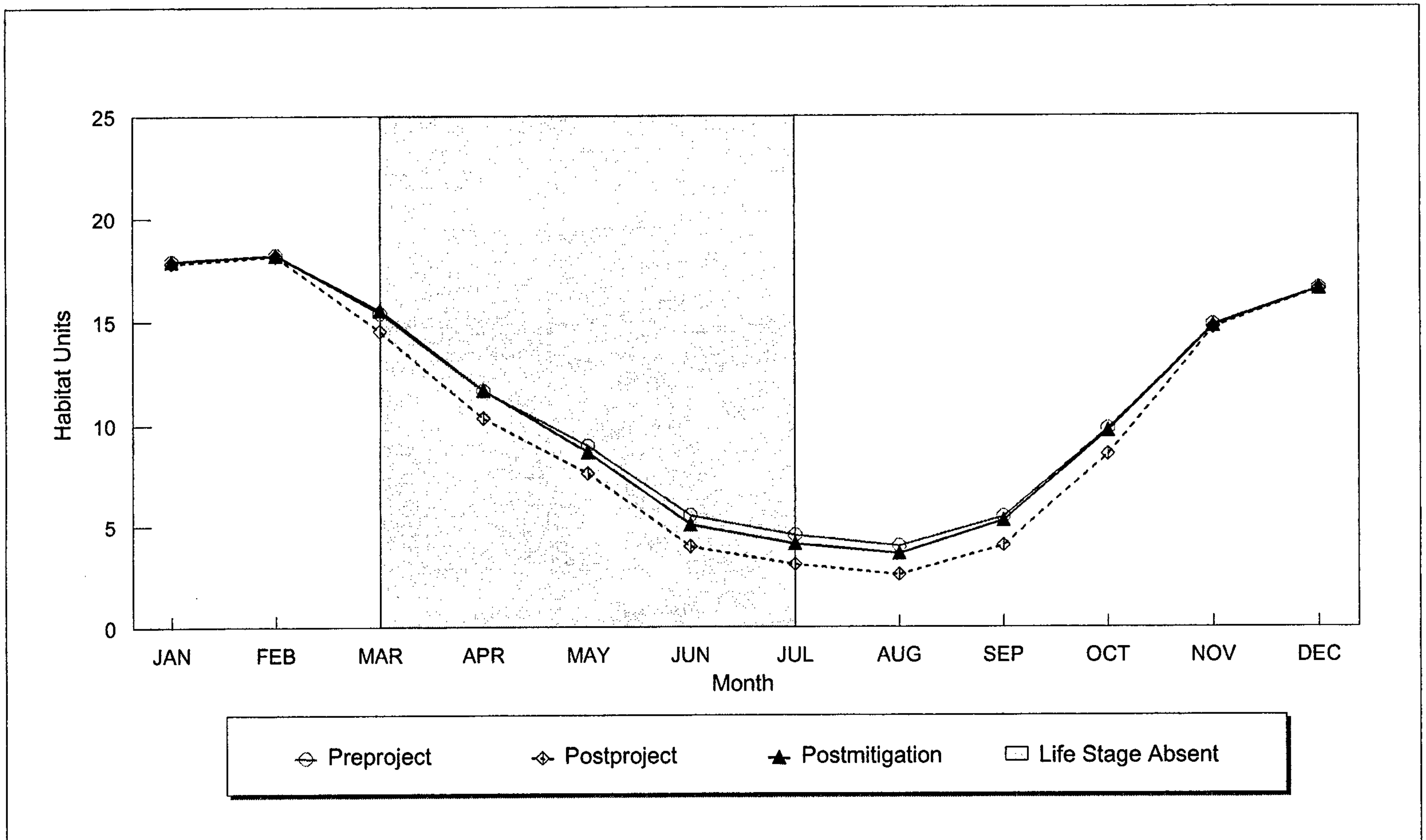
Water temperatures less than 57.2 °F provide optimal conditions for egg incubation. Suboptimal temperatures for egg incubation range between 57.2 °F and 60.8 °F. Exposure to water temperatures near or above 60 °F causes egg mortality and abnormal development of embryos. Eggs incubate in the Guadalupe River from October through March. Based on water-temperature needs for developing eggs and embryos, preproject water temperatures are typically too high for successful egg incubation until October, November, or sometimes December (Figures 1C-1 through 1C-4). Water temperatures from December through February are generally below the lethal limit of 60.8 °F and most likely support successful incubation. Conditions in March are of variable suitability for chinook incubation. By March, however, eggs would have advanced to the larval or juvenile life stage, and water temperatures likely would be suitable for their survival.

The Guadalupe River Project would minimally affect the thermal suitability units for chinook salmon egg incubation during November through February (Figure 1C-10). Although the Guadalupe River Project would reduce thermal suitability units during October and March, spawning is more likely in November, and incubation would be nearly complete by March. Maturation of planted SRA cover vegetation will cool water temperatures and will provide thermal suitability units nearly equivalent to preproject levels.



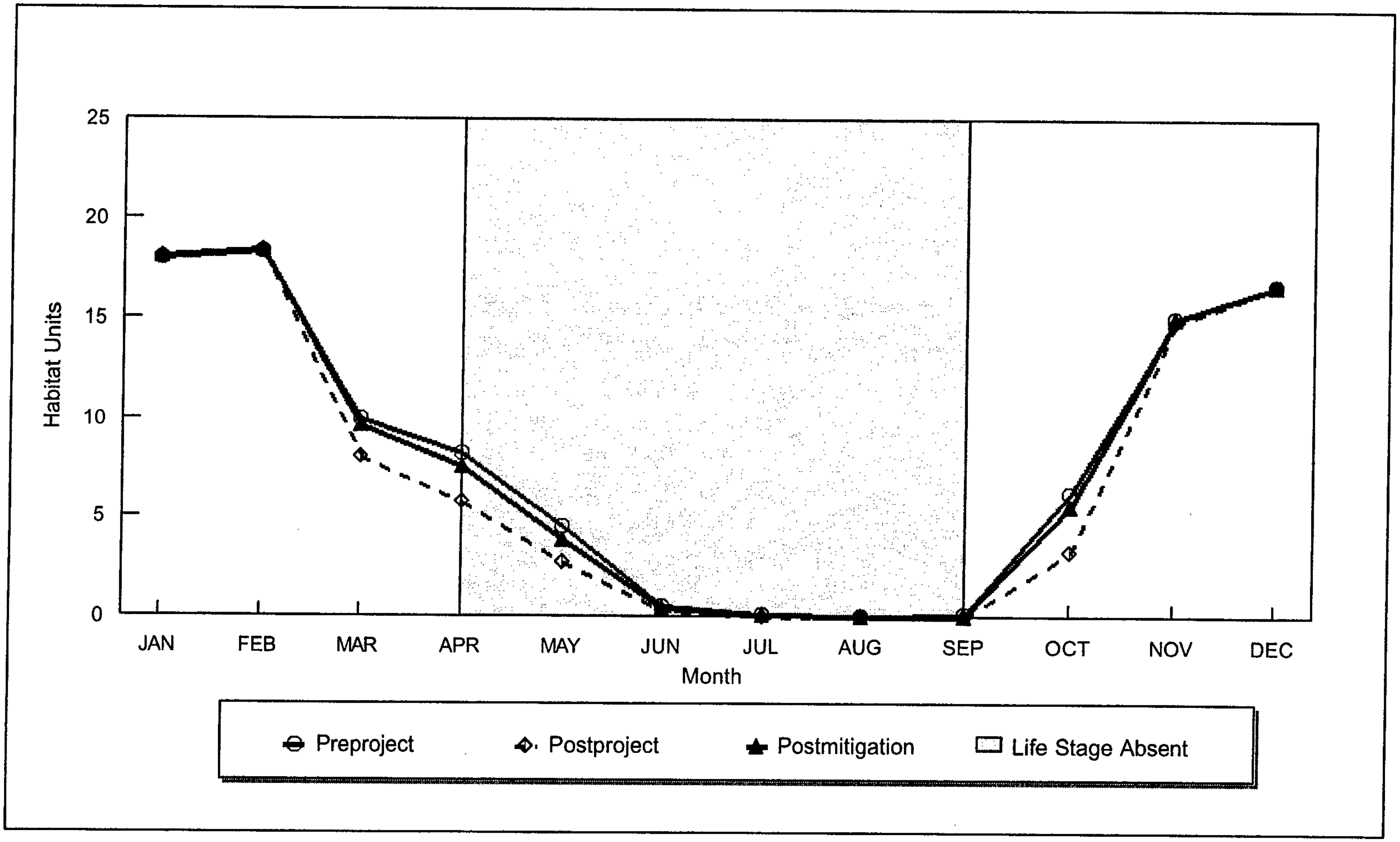
Preproject = 1990 conditions; Postproject = year 0 after construction; Postmitigation = year 40 after construction

Figure 1C-8. Total Thermal Suitability Units for Steelhead Smolts Simulated for the Dry/Media Year in All Segments Affected by the Guadalupe River Project with Proposed Action



Preproject = 1990 conditions; Postproject = year 0 after construction; Postmitigation = year 40 after construction

Figure 1C-9. Total Thermal Suitability Units for Adult Chinook Salmon Simulated for the Dry/Median Year in All Segments Affected by the Guadalupe River Project with Proposed Action



Preproject = 1990 conditions; Postproject = year 0 after construction; Postmitigation = year 40 after construction

Figure 1C-10. Total Thermal Suitability Units for Chinook Salmon Spawning and Incubation Simulated for the Dry/Median Year in All Stream Segments Affected by the Guadalupe River Project with Proposed Action

1C.1.7 Juvenile Chinook Salmon Rearing and Smoltification

The discussions for rearing and smolting are combined because juveniles may outmigrate at any time between January and June, and water temperature requirements are assumed to be similar for both life stages. Juvenile chinook salmon rear in the Guadalupe River from January through May. Few juvenile chinook salmon are expected during June. Optimal conditions for rearing occur at water temperatures less than 64.4 °F. Suboptimal temperatures for rearing range between 64.4 °F and 75.2 °F. Water temperatures greater than 64.4 °F are considered lethal.

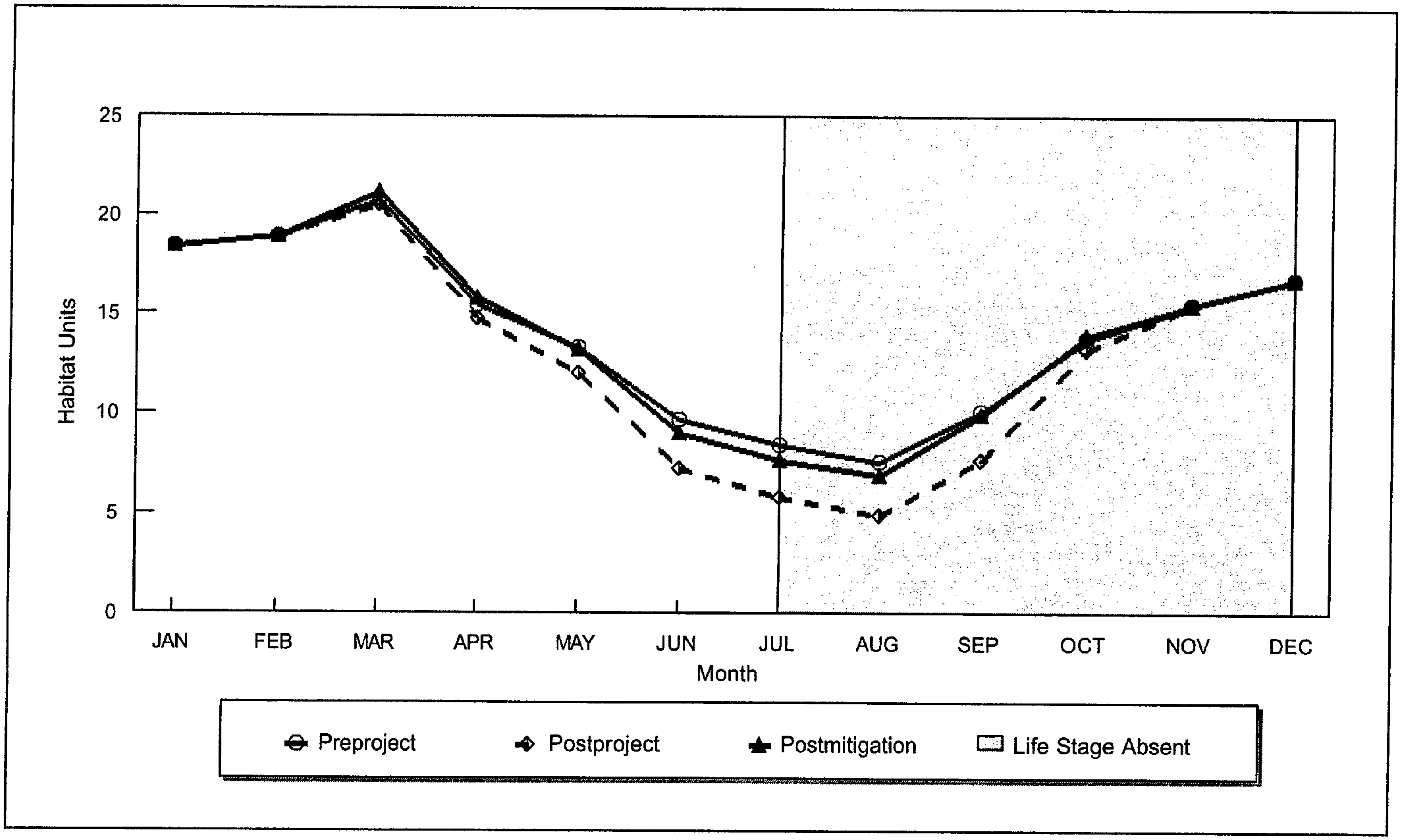
In May and June, simulated average maximum temperatures are below the lethal temperature threshold of 75.2 °F (Figures 1C-1 through 1C-4). With the Guadalupe River Project, simulated average maximum water temperatures may increase from optimal to suboptimal during March, April, or May, depending on location. The increase in water temperature is expected to minimally affect rearing and smolting chinook salmon because most of the juvenile chinook salmon will have migrated downstream. In addition, the higher postproject simulated temperatures do not exceed the lethal temperature threshold of 75.2 °F and will support rearing.

Maturation of SRA cover vegetation will to reduce water temperatures and improve rearing conditions. Total postmitigation thermal suitability units for juvenile chinook salmon in the Guadalupe River approach preproject conditions (Figure 1C-11).

1C.2 References

Raleigh, R. F., T. Hickman, R. C. Solomon, and P. C. Nelson. 1984. Habitat suitability information: rainbow trout. U.S. Fish and Wildlife Service, Division of Biological Services (FWS/OBS-82d/10.60). Washington, DC.

U.S. Army Corps of Engineers. 2000d. *[In preparation]* Simulation of water temperature for the Guadalupe River flood control project located in downtown San Jose, California. Jones & Stokes, Sacramento, CA.



Preproject = 1990 conditions; Postproject = year 0 after construction; Postmitigation = year 40 after construction

Figure 1C-11. Total Thermal Suitability Units for Juvenile Chinook Salmon Rearing Simulated for the Dry/Median Year in All Segments Affected by the Guadalupe River Project with Proposed Action

APPENDIX 1D

Supplemental Section 404(B)(1) Evaluation

APPENDIX 1D

Section 404(b)(1) Evaluation

1D.1 Background

The Guadalupe River flows from south to north through the Santa Clara Valley, west of San Jose, California, and discharges into South San Francisco Bay. The river has a long history of flooding, and planning efforts aimed at providing flood protection in the downtown San Jose area have been ongoing since the 1960s. The 1985 Guadalupe River Interim Feasibility Report and Environmental Impact Statement (1985 EIS) evaluated the environmental effects of constructing alternative flood protection approaches in reaches of the Guadalupe River from Interstate 880 (I-880) to Interstate 280 (I-280). The Selected Plan presented in the 1985 EIS was a single-purpose flood protection project that maximized flood protection. The project included an underground bypass conduit, currently called the Woz Way bypass, and a combination of channel modifications, such as widening and armoring, that would provide flood protection and retain riparian vegetation. The Selected Plan recommended lining substantial portions of the river with concrete and riprap. The Selected Plan also included a wildlife mitigation plan to replace the riparian habitat lost by implementing the flood protection elements of the project.

A previous Section 404(b)(1) Evaluation was completed and included as Appendix D of the 1985 EIS. The 1985 Section 404(b)(1) Evaluation describes the quantities, locations, and site-specific design considerations of all fill materials that would be placed in jurisdictional waters of the United States. The Section 404(b)(1) Evaluation also provides findings concerning the effects of all wetland fill activities on the grade and profile of the river's physical substrate; changes in water circulation, fluctuation, and salinity; suspended particulates; contaminant determinations; and aquatic ecosystems and organisms. The U.S. Army Corps of Engineers (the Corps) subsequently prepared an Environmental Assessments (EA) in 1991. Another 404(b)(1) Evaluation was prepared as Attachment B of the 1991 EA. It was submitted to the State Water Resources Control Board which issued Conditional Certification Under Clean Water Act Section 401. This subsequent 404(b)(1) Evaluation is hereby incorporated by reference. This Section 404(b)(1) Evaluation is abbreviated to address only those issues that are new or conditions that have substantially changed since the previous documentation was prepared.

1D.2 Alternatives Screening

Congress authorized flood protection measures along the Guadalupe River under Section 401(b) of the Water Resources Development Act (WRDA) of 1986 (Public Law 99-662). Flood protection measures along the Guadalupe River became an Authorized Project contingent on the development of a locally acceptable recreation plan and the identification of a recreation sponsor. The subsequent 1991 EA evaluated modifications to the Authorized Project that would more fully achieve flood protection, habitat protection, and recreation goals.

The Corps initiated project construction in 1992. Construction was based on the Authorized Project as described in a 1991 General Design Memorandum (GDM) and an associated Mitigation Monitoring Plan (MMP) completed in 1992. Segment 1 was constructed between 1992 and 1994, and Segment 2 was constructed between 1994 and 1996. Subsequently, the listing of the California red-legged frog and steelhead and the proposed listing of chinook salmon, along with threatened litigation over violations of water quality certification requirements, resulted in temporary cessation of construction activities in 1996. These developments also prompted reexamining the overall design of the Authorized Project and the need for modification of the MMP. The Corps and the Santa Clara Valley Water District (SCVWD) consulted with the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Game (CDFG), National Marine Fisheries Service (NMFS), and State Water Resources Control Board (SWRCB) about the Authorized Project and the MMP. Following consultation, the Corps and SCVWD committed to reformulate Segments 3A and 3B and to avoid affecting existing shaded riverine aquatic (SRA) cover habitat.

An extensive series of planning and evaluation studies have been conducted to develop practicable alternatives. These studies have been conducted since 1977, when the Corps developed hydrologic modeling and data analysis for the watershed. The 1985 EIS describes and considers a large number of alternative measures that could provide additional flood protection to the downtown San Jose area, including structural modifications and nonstructural management plans. Nonstructural management measures include rearranging and removing valuable properties from the floodplain, installing flood warning and evacuation systems, and developing flood insurance programs. The 1985 EIS evaluated the following structural alternatives: raising or floodproofing structures located in the floodplain, constructing large impoundments, and implementing an array of channel improvements. These alternatives were also determined to be infeasible or ineffective in achieving the project objectives. Flood warning systems and flood insurance programs were already in place; therefore, they were eliminated as being infeasible and/or ineffective for achieving the project objectives.

Channel improvement alternatives that have been evaluated consist of earthen bypass channels, widened earth channel modifications, construction of concrete bypass systems, and widened riprap-lined channel modifications. The 1991 GDM presents the results of additional studies, including the 1991 EA. The 1991 GDM was prepared to determine the most complete and acceptable solution to flooding along the Guadalupe River. The GDM describes the factors leading to the Authorized Project and serves as the basis for preparation of final plans and specifications for construction.

A wide array of alternatives was developed, and potential effects of the alternatives were evaluated based on the Corps and SCVWD screening criteria (Chapter 2, "Development and Evaluation of Alternatives" of the General Re-Evaluation and Environmental Report for Proposed Modifications [Report]). Selection of practicable alternatives was based on the assessment of the alternatives' potential environmental, economic, and social effects using (1) Federal/Corps planning principals and guidelines for plan formulation and evaluation and (2) other screening criteria developed by the Corps and SCVWD pursuant to NEPA and CEQA requirements. Only two practicable alternatives fulfill the stated objectives and criteria pursuant to the requirements of both NEPA and CEQA. The Bypass System Alternative includes a covered bypass system on the eastern bank of the river beginning near West Santa Clara Street and ending in the vicinity of Coleman Avenue. The Refined

Bypass System Alternative includes all the flood protection improvements of the Bypass System Alternative except for 200 feet of armoring of the east bank in the vicinity of the New Julian Street Bridge. The Bypass System Alternative and the Refined Bypass System Alternative are described in detail in Chapter 3 of the Report. A summary description is included below.

The Extended Bypass Alternative, based on the initial screening of the Report, Section 2.2.5.2, "Eight Bypass Variations," and the analysis of impacts of the alternative in the Report, Section 5.16, "An Analysis of an Additional Alternative Considered for CEQA Purposes," is considered not practicable. Key concerns include the alternative's constructability, right-of-way issues, and effects on traffic due to the potential closure of State Route 87 during construction.

All other alternative modification plans were eliminated from further analysis under both NEPA and CEQA because they:

- Did not provide the flood protection needed or did not adequately address other hydrologic concerns
- Were economically infeasible
- Potentially resulted in unacceptable adverse environmental effects

The Corps and SCVWD have identified the Refined Bypass System Alternative as the environmentally preferred and the environmentally superior alternative, pursuant to the requirements of NEPA and CEQA, respectively. The environmentally preferred or superior alternative is the alternative that causes the least damage to the biological and physical environment and protects, preserves, and enhances historic, cultural, and natural resources. The Refined Bypass System Alternative is considered the environmentally preferred and superior alternative because it would accomplish flood protection goals while maintaining water temperatures, providing habitat for endangered fish species, and enhancing recreational opportunities. The Refined Bypass System Alternative includes less bank armoring than the Bypass System Alternative and would have less impacts than the Bypass System Alternative on riparian vegetation and SRA cover vegetation. The Bypass System Alternative and the Refined Bypass System Alternative have the same effect on wetlands (Appendix 1D.4, "Factual Determinations").

1D.3 Bypass System Alternative and Refined Bypass System Alternative (Proposed Action)

1D.3.1 Location

The project area encompasses a 2.6-mile-long reach of the Guadalupe River near downtown San Jose, California. The study area includes the project area, the Reach A mitigation site, and the lower Guadalupe Creek mitigation site. The Guadalupe River watershed is bounded by the Coyote Creek watershed to the east and the Santa Cruz mountains to the west. The southern boundary of the project area is the I-280 overcrossing of the Guadalupe River; the northern boundary is the I-880 overcrossing.

1D.3.2 General Description

The Bypass System Alternative and Refined Bypass System Alternative includes constructing new flood protection facilities and improving existing facilities for the Guadalupe River. Features of the Bypass System Alternative include constructing a bypass system; armoring the riverbank and river bed; and constructing stabilization structures, low-flow channel check structures, and flood training walls. In addition, the Bypass System Alternative would remove and replace designated bridges, replace a USGS gaging station, and construct public access. The Bypass System Alternative includes completing the final phases of the Authorized Project that were not previously constructed: Segments 3A, 3B, and 3C Phase 3. The Bypass System Alternative differs from the Authorized Project because the Bypass System Alternative:

- Includes modifications to protect species recently listed under the ESA
- Provides additional onsite and offsite mitigation for impacts
- Meets conditions for SWRCB water quality certification under the Clean Water Act
- Further enhances recreational opportunities.

1D.3.3 Authority and Purpose

The primary purpose of the Guadalupe River Project is to provide improved flood protection for downtown San Jose by modifying and completing the Authorized Project, consistent with requirements for protecting the environmental quality of the Guadalupe River. A secondary but important purpose is to provide recreational access to the Guadalupe River. This Section 404(b)(1) Evaluation has been prepared in support of the Draft General Re-Evaluation and Environmental Report for Proposed Modifications, Guadalupe River Project, Downtown San Jose. The flood protection elements of the recommended action are essential to eliminating a critical flood threat in the downtown San Jose area. The Bypass System Alternative and Refined Bypass System Alternative also are designed to provide streambank treatments that are consistent with Guadalupe River Park and Gardens Master Plan objectives for recreation opportunities and downtown redevelopment.

1D.3.4 General Description of Fill Materials

1D.3.4.1 Bypass System Alternative

Riverbank and River Bed Armoring. Originally, the Guadalupe River Project proposed concrete armoring of approximately 13,718 linear feet (lf) of the riverbank and 5,008 lf of the river bed in Segments 3A, 3B, and 3C. The Bypass System Alternative includes bypass channels to reduce the amount of riparian vegetation and SRA cover affected, while still meeting the original goal of providing flood protection to downtown San Jose and its vicinity. The proposed bypass channels would minimize the need for armoring the riverbank and river bed, although some armoring would still be required to construct the inlets and outlets of the bypass system. The Bypass System Alternative would install a total of 5,532 lf of riverbank armoring and 2,635 lf of river bed armoring, respectively.

Low-Flow Channel Check Structures. Within the armored river bed and trapezoidal low-flow channel in Segment 3B, the Bypass System Alternative would construct between five and

seven low-flow channel check structures, depending on the final spacing adopted. The low-flow channel check structures – including a sill, a small weir, and boulders and gravel – would be placed in clusters at a spacing of 200 to 300 feet in the armored channel river bed. The configuration, spacing, and number of low-flow channel check structures might be adjusted after placement, and following significant flood events, to ensure that the channel provides the desired water-surface level control at low flows.

Invert Stabilization Structures. The Bypass System Alternative would place between 9 and 15 concrete stabilization structures in the river bed in unarmored sections of Segments 3A and 3B. These structures would reduce the grade of the river, trap coarse sediment, and create in-channel bars and varied habitat types.

Flood Training Walls. The Bypass System Alternative would construct flood training walls in the middle of Segment 3C to redirect overbank floodflows into the river channel. The walls would be constructed of concrete, concrete masonry units (CMUs), or earthen berms. Their height would range from 0.5 to 4.5 feet. The Bypass System Alternative involves constructing approximately 860 lf of training wall along the eastern edge of the channel and approximately 1,593 lf of training wall along the western bank.

Other In-Channel Activities. The Bypass System Alternative would remove the UPRR No. 3 and No. 4 bridges. The Bypass System Alternative also would replace the UPRR No. 4 bridge.

An exposed gas and sewer line crosses the river 150 feet upstream from UPRR No. 4 bridge. A concrete enclosure 4.5 feet wide by 3 feet high encases this line. Because the line might act as a barrier to fish at low flows, the Bypass System Alternative would relocate the line.

1D.3.4.2 Refined Bypass System Alternative (Proposed Action)

The Refined Bypass System Alternative is similar to the Bypass System Alternative and would result in similar fill as the Bypass System Alternative, as described in Section 1D.3.4.1, except for the following:

- The alternative includes 200 feet less bank armoring in the vicinity of the New Julian Street Bridge.
- Impacts on riparian vegetation and SRA cover vegetation would be reduced by 0.35 acre and 72 lf, respectively.
- The east bank recreation trail would cross New Julian Street at grade rather than passing under the bridge.

1D.4 Factual Determinations

The following factual determinations have been made based on project designs, operational features, and environmental commitments that are included in the Bypass System Alternative and Refined Bypass System Alternative for wetland protection and water quality (Chapter 3, Alternatives, Including the Proposed Action).

1D.4.1 Wetlands

- A wetland delineation, performed in April 2000, determined that jurisdictional wetlands are not present in Segments 3A and 3B and approximately 2.3 acres of jurisdictional wetlands are present in the Reach A mitigation site The delineation also determined that 6.1 acres of other waters of the United States are present in Segments 3A and 3B and 6.0 acres are present in Reach A.
- No jurisdictional wetlands will be filled with construction or maintenance of the Bypass System Alternative or the Refined Bypass Alternative. Approximately 3.8 acres of other waters of the United States will be filled in Segments 3A and 3B with implementation of the Bypass System Alternative or the Refined Bypass System Alternative. No wetlands or other waters of the United States will be affected in Reach A.
- Considerably less armoring of riverbank and river bed will be required under the Bypass System Alternative and Refined Bypass System Alternative compared to the Authorized Project.
- The Bypass System Alternative will construct low-flow channel check structures, invert stabilization structures, and flood training walls. The volume of fill placement in wetlands is not known. However, the volume of fill would be considerably less under the Bypass System Alternative than the volume of fill that would be placed under the Authorized Project.
- Construction of both the Bypass System Alternative and Refined Bypass System Alternative will require excavation of approximately 342,000 cubic yards of material. None of the material will be disposed of in waters of the United States, including wetlands.

1D.4.2 Water Quality

- Construction activities will disturb channel sediments and expose bed and bank sediments to erosion. Temporary and intermittent increases in turbidity, suspended sediment transport, and biostimulatory nutrients (nitrogen and phosphorus) will occur during construction. All construction activities will be carried out following implementation of water quality protection measures as required in the National Pollutant Discharge Elimination System (NPDES) stormwater permit for general construction activity and in the associated storm water pollution prevention plan (SWPPP), erosion and sediment control plan, and vegetation protection plan.
- Accidental spills of substances hazardous to aquatic organisms such as concrete, oil, and fuels could occur during construction activities. All construction activities will be carried out following implementation of water quality protection measures as required in a toxic materials control and spill response plan.
- Section 303(d) lists Guadalupe Creek, Alamitos Creek, Guadalupe Reservoir, Calero Reservoir, and San Francisco Bay as water quality impaired from mercury. The Regional Water Quality Control Board is developing a total maximum daily load (TMDL) program to reduce the hazards from mercury. Preliminary information indicates that mercury is primarily associated with finer sediments. Flood protection improvements would increase the net rate of transport of bed load material through the project area to the lower Guadalupe River area that is downstream from I-880. The quantity of fine

sediments transported as the wash load would not be affected by flood protection projects because these projects would not change the amount of source sediment materials that contain the mercury. Construction and maintenance specifications will include minimum standards and procedures in accordance with RWQCB requirements for sampling excavated material to determine mercury content and for proper disposal of excavated material.

- Removal of SRA cover vegetation and channel improvements will result in increased water temperatures in the project area and in Reach A during summer. Despite planting and maturation of SRA, water temperatures will be higher than preproject conditions in the project area. However, temperatures will be lower than preproject conditions in the Reach A and Guadalupe Creek mitigation sites.

1D.5 Findings of Compliance

The following findings apply to both the Bypass System Alternative and the Refined Bypass System Alternative. Both alternatives are the result of extensive planning and screening of potential alternatives as described in Chapter 2, "Development and Evaluation of Alternatives," of the Report.

- Adverse impacts, including placement of fill in wetlands and other waters of the United States, removal of riparian vegetation, and associated effects on other ecosystem components, are considered unavoidable. However, these effects would be considerably less than under the Authorized Project and would be fully mitigated(Chapter 5.4, "Biological Resources Vegetation," in the Report).

- The placement of fill in the form of armoring riverbank and river bed, low-flow channel check structures, and invert stabilization structures will not violate any State water quality standards (Chapter 5.3, "Water Quality," in the Report). To minimize adverse effects, instream work will be limited to the standard summer low-flow season as specified in CDFG Streambed Alteration Agreements.

- The placement of fill would not harm any endangered species or their critical habitat, or violate any sanctuary or refuge (Chapter 5.6, "Biological Resources – Fish," in the Report). To minimize adverse effects, instream work will be limited to the standard summer low-flow season as typically specified in CDFG Streambed Alteration Agreements.

- The proposed fill activity would not result in significant adverse impacts on human health and welfare, including effects on municipal and private water supplies, recreation and commercial fishing, shellfish, fish, or aquatic sites (Sections 5.6, "Biological Resources – Fish"; 5.8, "Recreation, Public Access, and Visual Resources," and 5.13, "Hazards and Hazardous Materials,").

- Short-term adverse effects on wildlife species associated with riparian vegetation removal are unavoidable and would be fully mitigated (Section 5.5, "Biological Resources – Wildlife," of the Report).

- On the basis of the guidelines, the proposed placement of fill will comply, to the extent practicable, following implementation of appropriate mitigation and monitoring measures to minimize adverse effects on the affected aquatic ecosystem.

APPENDIX 1E

Background Information on Acoustics

APPENDIX 1E

Background Information on Acoustics

1E.1 Sound Terminology

Sound travels through the air as waves of minute air pressure fluctuations caused by some type of vibration. In general, sound waves travel away from the sound source as an expanding spherical surface. The energy contained in a sound wave is consequently spread over an increasing area as it travels away from the source. This results in a decrease in loudness at greater distances from the sound source. The following terms are commonly used in acoustics.

1E.1.1 Decibel

Sound-level meters measure the pressure fluctuations caused by sound waves. Because of the ability of the human ear to respond to a wide dynamic range of sound pressure fluctuations, loudness is measured in terms of decibels (dB) on a logarithmic scale. This results in a scale that measures pressure fluctuations in a convenient notation and corresponds to our auditory perception of increasing loudness.

1E.1.2 A – Weighted Decibels

Most sounds consist of a broad range of sound frequencies. Because the human ear is not equally sensitive to all frequencies, several frequency-weighting schemes have been used to develop composite decibel scales that approximate the way the human ear responds to sound levels. The "A-weighted" decibel scale (dBA) is the most widely used for this purpose. Typical A-weighted sound levels for various types of sound sources are summarized in Table 1E-1.

1E.1.3 Equivalent Sound Level

Time-varying sound levels are often described in terms of an equivalent constant decibel level. Equivalent sound levels (Leq) are used to develop single-value descriptions of average sound exposure over various periods of time. Such average sound exposure values often include additional weighting factors for annoyance potential attributable to time of day or other considerations. The Leq data used for these average sound exposure descriptors are generally based on A-weighted sound-level measurements.

1E.1.4 Day – Night Average Sound Level

Average sound exposure over a 24-hour period is often presented as a day-night average sound level (Ldn). Ldn values are calculated from hourly Leq values, with the Leq values for the nighttime period (10:00 p.m.–7:00 a.m.) increased by 10 dB to reflect the greater disturbance potential from nighttime noises.

TABLE 1E-1. Weighted Sound Levels and Human Response

Sound Source	Sound Level (dBA)*	Response
Carrier deck jet operation	140	
Civil defense siren (at 100 feet)	130	Painfully loud
Jet takeoff (200 feet)	120	Threshold of feeling and pain
Riveting machine (at 1 foot)	110	
Rock music concert		
Pile driver (at 50 feet)	100	Very loud
Ambulance siren (at 100 feet)		
Heavy truck (50 feet)	90	
Pneumatic drill (at 50 feet)	80	
Freight train cars (50 feet		
Garbage disposal in home		
Freight train cars (at 100 feet)	70	Moderately loud
Freeway traffic (50 feet)		
Vacuum cleaner (at 10 feet)		
Air conditioning unit (20 feet)	60	
Speech in normal voice (15 feet)	50	
Residence-typical movement of people on TV or radio	40	Quiet
Soft whisper (5 feet)	30	
Recording studio	20	
	10	
	0	Threshold of learning

* Typical A-weighted sound levels in decibels. "A" weighting approximates the frequency response of the human ear.

Source: U.S. Council on Environmental Quality, 1970

1E.1.5 Community Noise Equivalent Level

The community noise equivalent level (CNEL) is also used to characterize average sound levels over a 24-hour period, with weighting factors included for evening and nighttime sound levels. Leq values for the evening period (7:00 p.m.–10:00 p.m.) are increased by 5 dB, while Leq values for the nighttime period (10:00 p.m.–7:00 a.m.) are increased by 10 dB. For given set of sound measurements, the CNEL value will usually be about 1 dB higher than the Ldn value. In practice, CNEL and Ldn are often used interchangeably.

1E.1.6 Percentile – Exceeded, Maximum, and Minimum Sound Level

The sound level exceeded during a given percentage of a measurement period is the percentile-exceeded sound level (Lx). Examples include L10, L50, and L90. L10 is the A-weighted sound level that is exceeded 10 percent of the measurement period, L50 is the level exceeded 50 percent of the period, and so on. L50 is the median sound level measured during the measurement period. L90, the sound level exceeded 90 percent of the time, excludes high localized sound levels produced by nearby sources such as single car passages or bird chirps. L90 is often used to represent the background sound level. L50 is also used to provide a less conservative assessment of the background sound level.

The maximum sound level (Lmax) and the minimum sound level (Lmin) are the maximum and minimum sound levels respectively, measured during the measurement period. When a sound meter is set to the "slow" response setting as is typical for most community noise measurements, the Lmax and Lmin values are the maximum and minimum levels measured over a one-second period.

1E.1.7 Ambient Sound

Ambient sound is the all-encompassing sound associated with a given community site, usually being a composite of sounds from many sources, near and far, with no particular sound being dominant.

1E.2 Equivalencies Between Various Sound Descriptors

The Ldn value at a site calculated from a set of measurements taken over a given 24-hour period will be slightly lower than the CNEL value calculated over the same period. Except in situations where unusually high evening sound levels occur, the CNEL value will be within 1.5 dB of the Ldn value for the same set of sound measurements.

The relationship between peak hourly Leq values and associated Ldn values depends on the distribution of traffic over the entire day. There is no precise way to convert a peak hourly Leq value to an Ldn value. However, in urban areas near heavy traffic, the peak hourly Leq value is typically 2 to 4 dB lower than the daily Ldn value. In less heavily developed areas, the peak hourly Leq is often equal to the daily Ldn value. For rural areas with little nighttime traffic, the peak hourly Leq value will often be 3 to 4 dB greater than the daily Ldn value.

1E.3 Working with Decibel Values

The nature of the decibel scale is such that the individual sound levels for different sound sources cannot be added directly to give the combined sound level of these sources. Two sound sources producing equal sound levels at a given location will produce a composite sound level that is 3 dB greater than either sound alone. When two sound sources differ by 10 dB, the composite sound level will be only 0.4 dB greater than the louder source alone.

- a 3-dB change is just perceptible,
- a 5-dB change is clearly perceptible, and
- a 10-dB change is perceived as being twice or half as loud.

A doubling or halving of acoustic energy will change the resulting sound level by 3 dB, which corresponds to a change that is just perceptible. In practice, this means that a doubling of traffic volume on a roadway, doubling the number of people in a stadium, or doubling the number of wind turbines in a wind farm will, as a general rule, only result in a 3-dB, or just perceptible, increase in noise.

There are a number of factors that affect how sound propagates outdoors. These factors, described by Hoover and Keith (1996) , are summarized below.

1E.3.1 Distance Attenuation

As a general rule, sound from localized or point sound sources spreads out as it travels away from the source and the sound level drops at a rate of 6 dB per doubling of distance. If the sound source is long in one dimension, such as traffic on a highway or a long train, the sound source is considered to be a line source. As a general rule, the sound level from a line source will drop off at a rate of 3 dB per doubling of distance. If the intervening ground between the line source and the receptor is acoustically "soft" (e.g., ground vegetation, scattered trees, clumps of bushes), an attenuation rate of 4.5 dB per doubling of distance is generally used.

1E.3.2 Attenuation from Barriers

Any solid structure, such as a berm, wall, or building that blocks the line of sight between a source and receiver serves as a sound barrier and will result in additional sound attenuation. The amount of additional attenuation is a function of the difference between the length of the sound path over the barrier and the length of the direct line of sight path. Thus, the sound attenuation of a barrier between a source and a receiver that are very far apart will be much less than the attenuation that would result if either the source or the receiver is very close to the barrier.

1E.3.3 Molecular Absorption

Air absorbs sound energy as a function of the temperature, humidity of the air, and frequency of the sound. Additional sound attenuation on the order of 1 to 2 dB per 1,000 feet can occur.

1E.3.4 Anomalous Excess Attenuation

Large-scale effects of wind speed, wind direction, and thermal gradients in the air can cause large differences in sound transmission over large distances. These effects when combined result in anomalous excess attenuation, which can be applied to long-term sound-level estimates. Additional sound attenuation on the order of about 1 dB per 1,000 feet can occur.

1E.3.5 Other Atmospheric Effects

Short-term atmospheric effects relating to wind and temperature gradients can cause bending of sound waves and can influence changes in sound levels at large distances. These effects can either increase or decrease sound levels depending on the orientation of the source and receptor and the nature of the wind and temperature gradient. Because these effects are normally short-term, it is generally not practical to include them in sound propagation calculations. Understanding these effects, however, can help explain variations that occur between calculated and measured sound levels.

1E.5 Guidelines for Interpreting Sound Levels

Various Federal, State, and local agencies have developed guidelines for evaluating land use compatibility under different sound-level ranges. The following is a summary of Federal and State guidelines.

1E.5.1 Federal Agency Guidelines

The Federal Noise Control Act of 1972 (Public Law 92-574) established a requirement that all Federal agencies administer their programs to promote an environment free of noise that jeopardizes public health or welfare. The U.S. Environmental Protection Agency (EPA) was given the responsibility for:

- providing information to the public regarding identifiable effects of noise on public health or welfare,
- publishing information on the levels of environmental noise that will protect the
- coordinating Federal research and activities related to noise control, and
- establishing Federal noise emission standards for selected products distributed in interstate commerce.

The Federal Noise Control Act also directed that all Federal agencies comply with applicable Federal, State, interstate, and local noise control regulations.

Although EPA was given major public information and Federal agency coordination roles, each Federal agency retains authority to adopt noise regulations pertaining to agency programs. EPA can require other Federal agencies to justify their noise regulations in terms of the Federal Noise Control Act policy requirements. The Occupational Safety and Health Administration retains primary authority for setting workplace noise exposure standards. The Federal Aviation Administration retains primary jurisdiction over aircraft noise standards, and the Federal Highway Administration (FHWA) retains primary jurisdiction over highway noise standards.

In 1974, in response to the requirements of the Federal Noise Control Act, EPA identified indoor and outdoor noise limits to protect public health and welfare (communication disruption, sleep disturbance, and hearing damage). Outdoor Ldn limits of 55 dB and indoor Ldn limits of 45 dB are identified as desirable to protect against speech interference and sleep disturbance for residential, educational, and healthcare areas. Sound-level criteria to protect against hearing damage in commercial and industrial areas are identified as 24-hour Leq values of 70 dB (both outdoors and indoors).

The FHWA has adopted criteria for evaluating noise impacts associated with federally funded highway projects and for determining whether these impacts are sufficient to justify funding noise mitigation actions (23 CFR 772). The FHWA noise abatement criteria are based on peak hourly Leq sound levels, not Ldn or 24-hour Leq values. The peak 1-hour Leq criteria for residential, educational, and healthcare facilities are 67 dB outdoors and 52 dB indoors. The peak 1-hour Leq criterion for commercial and industrial areas is 72 dB (outdoors).

The U.S. Department of Housing and Urban Development has established guidelines for evaluating noise impacts on residential projects seeking financial support under various grant programs (44 FR 135:40860-40866, January 23, 1979). Sites are generally considered acceptable for residential use if they are exposed to outdoor Ldn values of 65 dB or less. Sites are considered "normally unacceptable" if they are exposed to outdoor Ldn values of 65–75 dB. Sites are considered unacceptable if they are exposed to outdoor Ldn values above 75 dB.

1E.5.2 State Agency Guidelines

In 1987, the California Department of Health Services published guidelines for the noise elements of local general plans. These guidelines include a sound level/land use compatibility chart that categorizes various outdoor Ldn ranges into up to four compatibility categories (normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable) by land use. For many land uses, the chart shows overlapping Ldn ranges for two or more compatibility categories.

The noise element guidelines chart identifies the normally acceptable range for low-density residential uses as less than 60 dB and the conditionally acceptable range as 55–70 dB. The normally acceptable range for high-density residential uses is identified as Ldn values below 65 dB, and the conditionally acceptable range is identified as 60–70 dB. For educational and medical facilities, Ldn values below 70 dB are considered normally acceptable and Ldn values of 60–70 dB are considered conditionally acceptable. For office and commercial land uses, Ldn values below 70 dB are considered normally acceptable and Ldn values of 67.5–77.5 are categorized as conditionally acceptable.

The California Department of Housing and Community Development has adopted noise insulation performance standards for new hotels, motels, and dwellings other than detached single-family structures (24 CCR T25-28). These standards require that "interior CNELs with windows closed, attributable to exterior sources, shall not exceed an annual CNEL of 45 dB in any habitable room."

The California Department of Transportation uses the FHWA criteria as the basis for evaluating noise impacts from highway projects.

1E.6 Reference

Hoover, R. M., and R. H. Keith. 1996. Noise control for buildings and manufacturing plants. Hoover and Keith, Inc. Houston, TX.

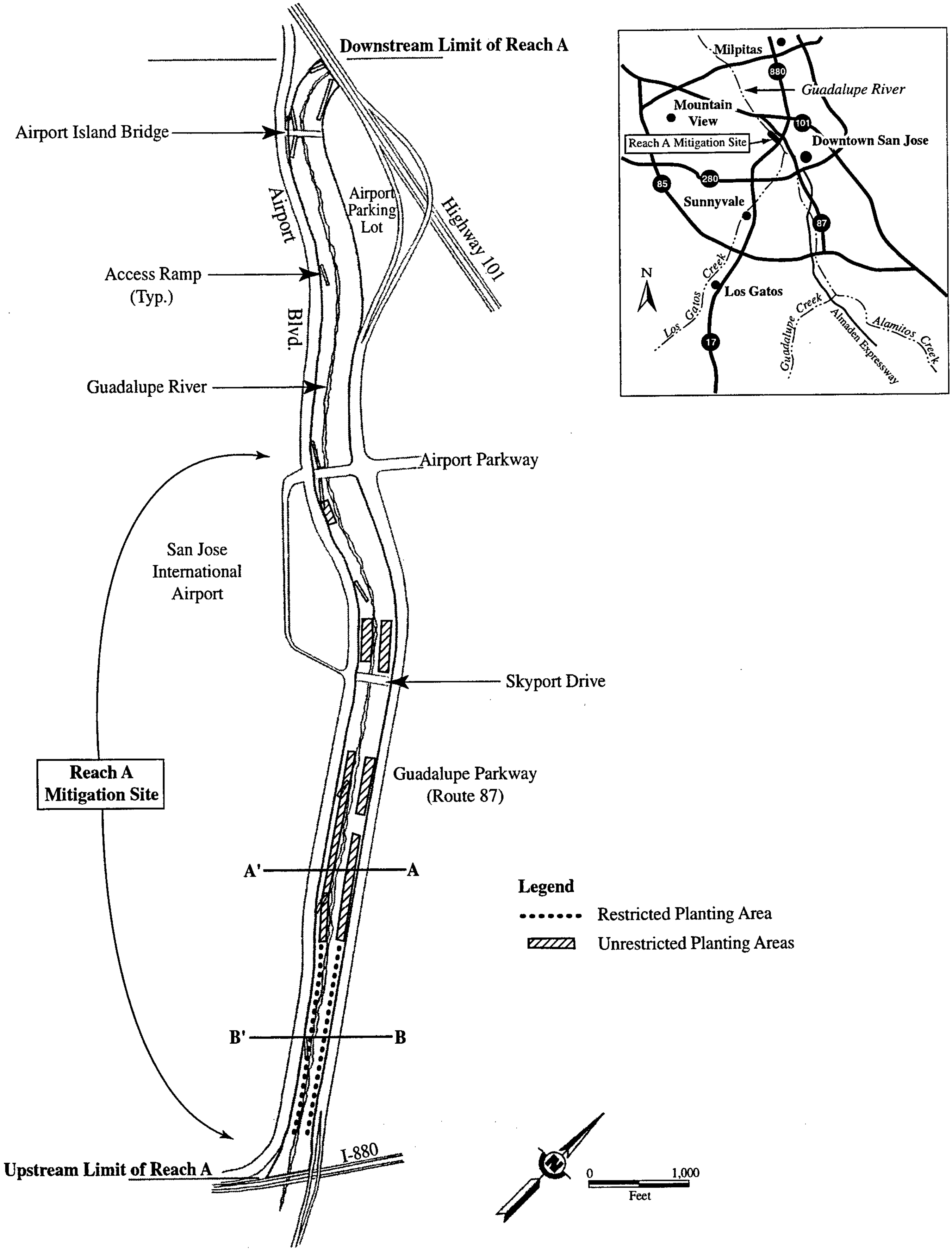
APPENDIX 1F

Section 401 Conditional Water Quality Certification

See information in Appendix B-1 of the Mitigation Monitoring Plan (Appendix 3)

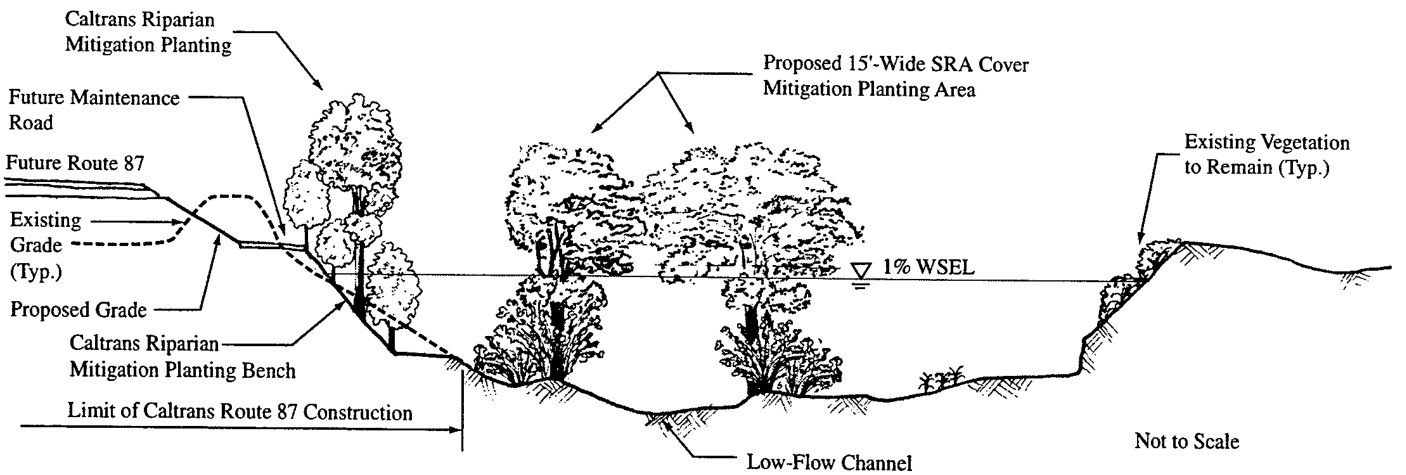
APPENDIX 1G

OffSite Mitigation Areas

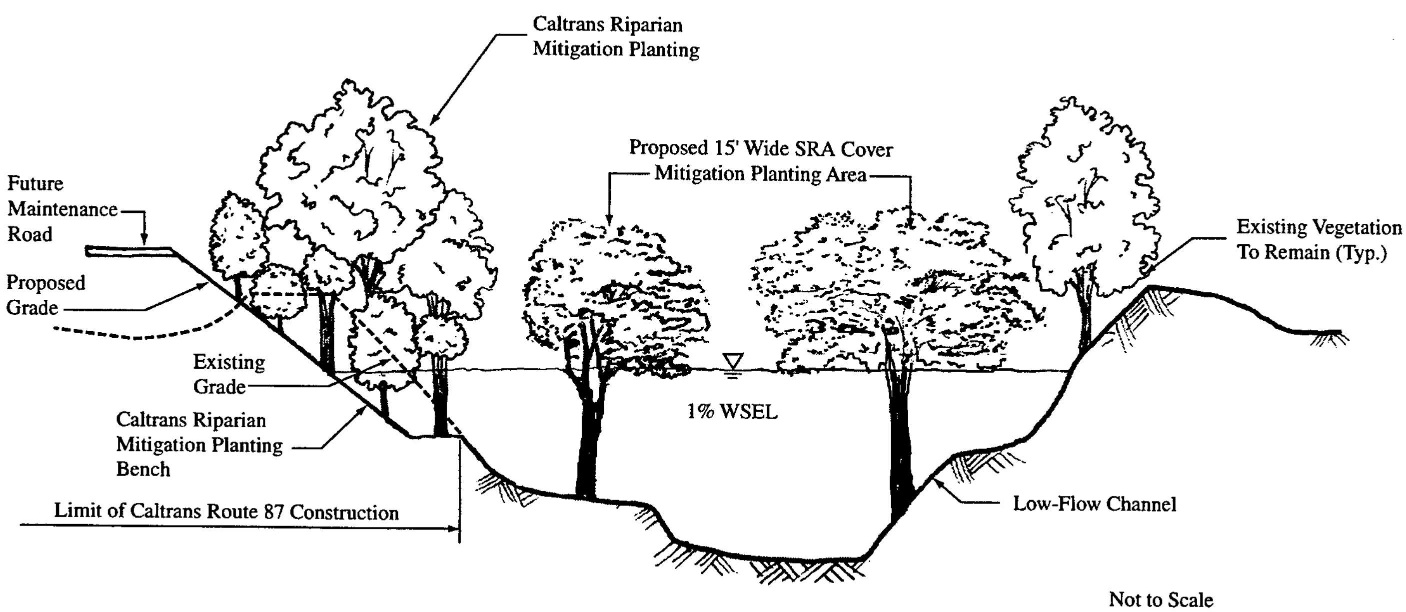


Revised

Figure 1G-1. Reach A Mitigation Site
Planting area locations are approximate.



Typical Planting Areas Between Skyport Drive to 2,000 Feet Downstream of I-880 (A-A')
(Looking Upstream)



Typical Planting Areas Between 2,000 Feet to 300 Feet Downstream of I-880 (B-B')
(Looking Upstream)

Revised

Figure IG-2. Conceptual Reach A Cross Sections (Cross sections are indicated on figure 1G-1)

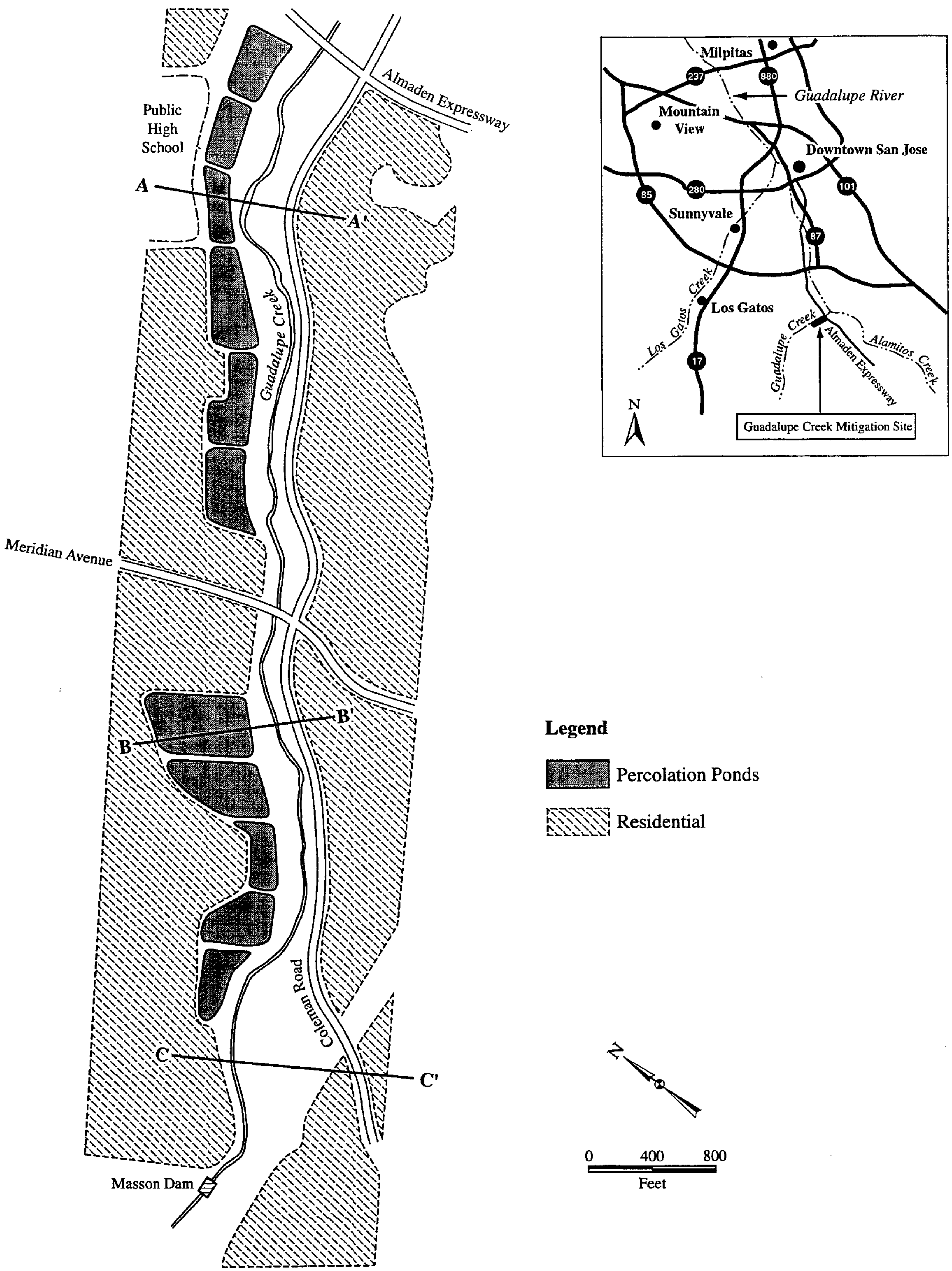
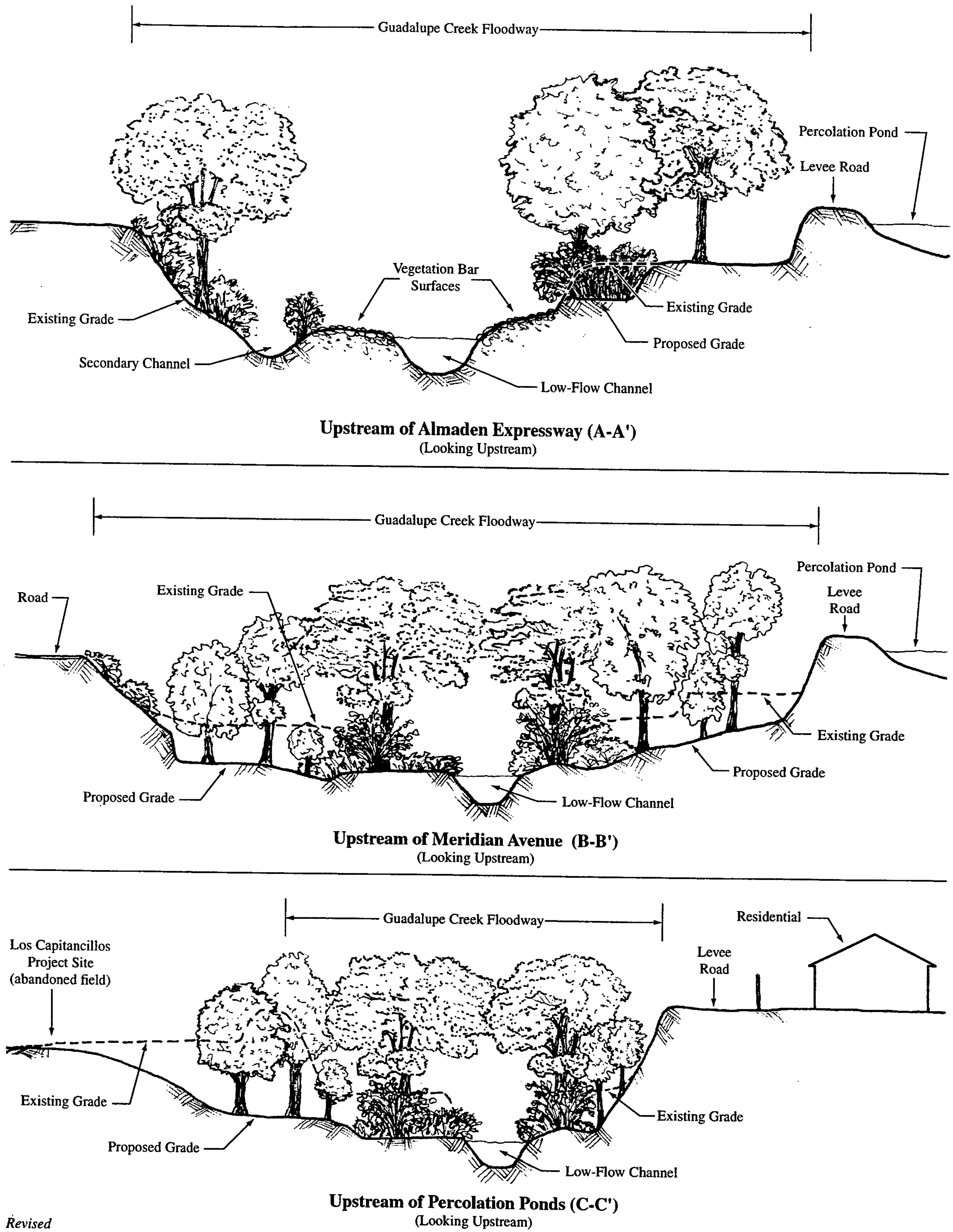


Figure 1G-3. Guadalupe Creek Mitigation Site



Revised

Figure IG-4. Conceptual Guadalupe Creek Cross Sections
(Cross Sections are indicated on Figure IG-3)

APPENDIX 1H

Water Quality Data

TABLE 1H-1. U.S. Geological Survey Selected Historical Water Quality Data for the Guadalupe River for Various Water Years 1949 through 1994
These data indicate that Guadalupe River water has relatively high hardness and that pH values are slightly above neutral.

	Feb 8 1946	Nov 6 1967	Mar 7 1968	Oct 29 1968	May 20 1969	Aug 1 1979	Feb 19 1980	Sep 10 1980	Mar 27 1981	Sep 1 1981	Jan 5 1982	Sep 8 1982
Streamflow (cfs)	NA	1	14	2	NA	NA	7,900	0.53	3.7	728	943	2.8
Temperature (Celsius)	NA	14	14	15	10	NA	12.5	18	15.5	19.5	11	23
pH	NA	NA	NA	NA	NA	NA	6.8	7.8	8	8	7.9	7.5
Turbidity (NTUs)	NA	NA	NA	NA	NA	NA	800	4	16	2.6	270	1.5
Dissolved Oxygen (mg/L)	NA	NA	NA	NA	NA	NA	NA	NA	84	9.8	10.5	116
Chemical Oxy. Demand (mg/L COD)	NA	NA	NA	NA	NA	NA	280	39	43	69	47	30
Hardness (mg/L $CaCO_3$)	140	NA	NA	NA	NA	NA	68	350	130	NA	113	200
Total Nitrogen (mg/L N)	NA	NA	NA	NA	NA	2.1	0.93	1.2	0.82	1.4	1.8	0.4
Total Phosphorus (mg/L P)	NA	NA	NA	NA	NA	0.07	2.8	0.22	0.21	0.24	0.25	0.09
Dissolved Arsenic (µg/L As)	NA	NA	NA	NA	NA	NA	2	4	10	2	2	2
Dissolved Cadmium (µg/L Cd)	NA	<1.4	<1.4	<1.4	<1.4	<1	0	0	1	0	1	<1
Dissolved Chromium (µg/L Cr)	NA	<1.4	<1.4	<1.4	<1.4	0	0	0	10	0	<10	<10
Dissolved Copper (µg/L Cu)	NA	<1.4	<1.4	<1.4	<1.4	2	2	2	6	2	2	5
Dissolved Lead (µg/L Pb)	NA	<1.4	<1.4	<1.4	<1.4	0	0	2	3	5	6	<1
Dissolved Manganese (µg/L Mn)	NA	171	19	15	20	30	10	0	20	0	20	20
Dissolved Mercury (µg/L Hg)	NA	NA	NA	NA	NA	0	0	0	0	0.36	<0.1	<0.1
Dissolved Nickel (µg/L Ni)	NA	234	9.7	43	37	0	0	0	0	0	<100	<100
Dissolved Selenium (µg/L Se)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Silver (µg/L Ag)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Zinc (µg/L Zn)	NA	<5.7	<5.7	<5.7	<5.7	6	190	10	20	40	10	30

TABLE 1H-1. (CONTINUED).

	Jan 27 1983	Aug 30 1983	Feb 9 1985	Sep 11 1985	Jan 28 1987	Aug 11 1987	Nov 17 1987	Aug 17 1988	Jul 25 1989	Oct 25 1989	Jan 13 1990	Feb 17 1990
Streamflow (cfs)	1,540	20	116	20	36	16	47	4.3	1	29	608	210
Temperature (Celsius)	NA	NA	10	17.5	13	22	16	21	21	16	NA	10
pH	7.9	8.3	8.2	8.4	8.1	8.4	8.1	8.2	7.8	7.6	7.3	8.1
Turbidity (NTUs)	350	4.5	30	24	17	8	17	5	4.4	44	76	42
Dissolved Oxygen (mg/L)	10.6	10.6	10.8	9.4	9.2	10.4	8.6	7.9	8.6	8.1	NA	10.2
Chemical Oxy. Demand (mg/L COD)	46	24	27	10	24	<10	29	47	16	39	110	62
Hardness (mg/L $CaCO_3$)	99	350	220	340	180	340	220	350	380	110	52	120
Total Nitrogen (mg/L N)	0.8	2.9	2.1	3.2	1.7	2.3	2.8	2	1.2	1.2	2.1	2.1
Total Phosphorus (mg/L P)	0.6	0.05	0.1	0.05	0.1	0.09	0.13	0.06	0.07	0.19	0.27	0.25
Dissolved Arsenic (µg /L As)	1	1	<1	1	2	1	1	1	1	NA	NA	NA
Dissolved Cadmium (µg /L CD)	<1	<1	<1	1	<1	<1	<1	<1	<1	NA	NA	NA
Dissolved Chromium (µg /L Cr)	<10	<10	<10	NA	<1	2	2	<1	<1	NA	NA	NA
Dissolved Copper (µg /L Cu)	2	1	3	<1	2	<1	5	1	<1	NA	NA	NA
Dissolved Lead (µg /L Pb)	<1	<1	2	1	<5	<5	<5	<5	<1	NA	NA	NA
Dissolved Manganese (µg /L Mn)	10	12	8	20	10	9	13	12	16	NA	NA	NA
Dissolved Mercury (µg /L Hg)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	NA	NA
Dissolved Nickel (µg /L Ni)	<100	<100	<100	<100	<1	<1	5	3	1	NA	NA	NA
Dissolved Selenium (µg /L Se)	NA	NA	NA	NA	1	3	1	3	3	NA	NA	NA
Dissolved Silver (µg /L Ag)	NA	NA	NA	NA	<1	<1	<1	<1	<1	NA	NA	NA
Dissolved Zinc (µg /L Zn)	70	9	<3	<10	8	<3	12	10	10	NA	NA	NA

TABLE 1H-1. (CONTINUED).

	Aug 27 1990	Mar 24 1991	Feb 11 1992	Dec 5 1992	Jan 5 1992	Feb 7 1993	Feb 17 1993	Mar 23 1993	Dec 14 1993	Jan 23 1994	Feb 7 1994	Mar 25 1994
Streamflow (cfs)	1.8	1,120	897	1.3	6	52	62	158	119	22	300	55
Temperature (Celsius)	20	11.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PH	7.8	8	NA	NA	NA	7.7	7.7	7.6	NA	NA	NA	NA
Turbidity (NTUs)	1.5	33	NA	260	110	90	250	80	70	27	130	100
Dissolved Oxygen (mg/L)	7.5	10.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chemical Oxy. Demand (mg/L COD)	22	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hardness (mg/L $CaCO_3$)	310	160	NA	120	110	150	130	140	98	240	120	120
Total Nitrogen (mg/L N)	5.8	1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Phosphorus (mg/L P)	0.11	0.18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Arsenic (µg /L As)	NA	NA	2.5	4	1.7	2.2	NA	NA	NA	NA	NA	NA
Dissolved Cadmium (µg /L CD)	NA	NA	0.7	1.3	0.3	0.2	0.4	0.8	0.2	0.6	0.4	0.5
Dissolved Chromium (µg /L Cr)	NA	NA	40	56	7.3	5.5	NA	NA	NA	NA	NA	NA
Dissolved Copper (µg /L Cu)	NA	NA	33	54	18	7.9	20	24	19	15	20	26
Dissolved Lead (µg /L Pb)	NA	NA	43	63	21	13	30	34	30	19	32	31
Dissolved Manganese (µg /L Mn)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Mercury (µg /L Hg)	NA	NA	ND	0.6	ND	ND	NA	NA	NA	NA	NA	NA
Dissolved Nickel (µg /L Ni)	NA	NA	77	160	9.4	19	NA	NA	NA	NA	NA	NA
Dissolved Selenium (µg /L Se)	NA	NA	0.22	0.47	0.43	0.43	NA	NA	NA	NA	NA	NA
Dissolved Silver (µg /L Ag)	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dissolved Zinc (µg /L Zn)	NA	NA	150	210	70	45	65	120	64	62	88	98

TABLE 1H-1. (CONTINUED).

µg	=	micrograms per liter
NTU	=	Nephelometric turbidity unit
ND	=	Not Detectable
NA	=	Not Available

Source: Water Chemistry of Santa Clara Valley, California 1970, USGS Water Resources Data for California 1979 to 1983, 1985, 1987 to July 1991, and Nonpoint Source Records for Metals Concentration for Water Years 1991 to 1994.

APPENDIX 1I

Vegetation, Wildlife, and Fish Observed or Expected to Occur in the Guadalupe River Project Area

TABLE 1I-1. Vascular Plants Observed or Expected to Occur in the Project Area (Segments 1, 2, and 3), Reach A Mitigation Site and Guadalupe Creek Mitigation Site

Family	Species Name	Common Name	Indicator Status	Species Observed in Segments 1, 2, and 3; Reach A Mitigation Site; and Guadalupe Creek Mitigation Site[1]	Species Expected to Occur in Segments 1, 2, and 3; Reach A Mitigation Site and Guadalupe Creek Mitigation Site[2]
Aceraceae	*Acer negundo* ssp. *Californicum*	Box elder	FACW	X	
Agavaceae	*Agave americana*	Century plant	–	X	
Amaranthaceae	*Amaranthus retroflexus*	Red-root amaranthus	FACU		
Anacardiaceae	*Schinus molle*	California pepper tree	–	X	
	Toxicodendron diversilobum	Poison oak	–	X	
Apiaceae	*Conium maculatum*	Poison-hemlock	FACW	X	
	Foeniculum vulgare	Sweet fennel	FACU	X	
	Sanicula crassicaulis var. crassicaulis	Pacific sanicle	–		X
Apocynaceae	*Vinca* major	Periwinkle	–	X	
Araliaceae	*Hedera canariensis*	Algerian ivy	–		X
Araliaceae	*Hedera helix*	English Ivy	–	X	
Asteraceae	*Achillea millefolium*	Common white yarrow	FACU		X
	Ambrosia psilostachya var. *californica*	Western ragweed	FAC		X
	Anthemis cotula	Mayweed	FACU		X
	Artemisia biennis	Sagewort	–		X
	Artemisia californica	California sagebrush	–		X
	Artemisia douglasiana	Mugwort	FACW	X	
	Aster chilensis var. *chilensis*	Common California aster	FAC	X	
	Aster subulatus	Slim aster	FACW		X

TABLE 1I-1. Vascular Plants Observed or Expected to Occur in the Project Area (Segments 1, 2, and 3), Reach A Mitigation Site and Guadalupe Creek Mitigation Site (continued)

Family	Species Name	Common Name	Indicator Status	Species Observed in Segments 1, 2, and 3; Reach A Mitigation Site; and Guadalupe Creek Mitigation Site[1]	Species Expected to Occur in Segments 1, 2, and 3; Reach A Mitigation Site and Guadalupe Creek Mitigation Site[2]
	Baccharis salicifolia	Mule fat	FACW	X	
	Bidens frondosa	Stick tight	FACW		X
	Brickellia californica	California brickellbush	FACU		X
	Carduus pycnocephalus	Italian thistle	–	X	
	Centaurea solstitialis	Yellow star-thistle	–	X	
	Cichorium intybus	Wild chicory	–	X	
	Cirsium arverse	Canada	FAC	X	
	Cirsium vulgare	Bull thistle	FACU		X
	Conyza canadensis	Western horseweed	FAC	X	
	Gnaphalium sp.	Cudweed	–	X	
	Hemizonia luzulaefolia ssp. *luzulaefolia*	Hayfield tarweed	–	X	
	Heterotheca grandiflora	Telegraph weed	–	X	
	Heterotheca Oregona	Golden aster	–		X
	Jaumea carnosa	Fleshy jaumea	OBL	X	
	Lactuca serriola	Prickly wild lettuce	FAC	X	
	Matricaria matricarioides	Pineapple weed	FACU		X
	Picris echioides	Bristly ox-tongue	FAC	X	
	Senecio milanoides	German ivy	UN		X
	Senecio vulgaris	Common groundsel	NI*		X
	Silybum marianum	Milk thistle	–	X	

TABLE 1I-1. Vascular Plants Observed or Expected to Occur in the Project Area (Segments 1, 2, and 3), Reach A Mitigation Site and Guadalupe Creek Mitigation Site (continued)

Family	Species Name	Common Name	Indicator Status	Species Observed in Segments 1, 2, and 3; Reach A Mitigation Site; and Guadalupe Creek Mitigation Site[1]	Species Expected to Occur in Segments 1, 2, and 3; Reach A Mitigation Site and Guadalupe Creek Mitigation Site[2]
	Solidago occidentalis = Euthamia o.	Western goldenrod	UN	X	
	Sonchus asper	Prickly sow-thistle	FAC		X
	Sonchus oleraceus	Common sow-thistle	NI*	X	
	Targopogon porrifolius	Salsify	–		X
	Xanthium spinosum	Spiny clotbur	FAC+		X
	Xanthium strumarium ssp. *canadense*	Cocklebur	FAC+	X	
Betulaceae	*Almus rhombifolia*	White alder	FACW	X	
Bignoniaceae	*Catalpa* sp.	Catalpa	–		X
Brassicaceae	*Brassica campestris*	Field mustard	–		X
	Brassica geniculata	Summer mustard	–	X	
	Brassica nigra	Black mustard	–	X	
	Brassica rapa	Field mustard	–	X	
	Lepidium latifolium	Broadleaf peppergrass	FACW	X	
	Lepidium nitidum	Common peppergrass	FAC	X	
	Lobularia maritima	Sweet alyssum	(FACU)		X
	Nasturtium officinale	Water-cress	OBL		
	Raphanus sativus	Wild radish	–	X	
	Rorippa nasturtium - aquaticum	Water-cress	OBL	X	
Cactaceae	*Littoralis* var. *littoralis*	Prickly pear	–	X	
	Opuntia sp.	Prickly pear	–		

TABLE 11-1. Vascular Plants Observed or Expected to Occur in the Project Area (Segments 1, 2, and 3), Reach A Mitigation Site and Guadalupe Creek Mitigation Site (continued)

Family	Species Name	Common Name	Indicator Status	Species Observed in Segments 1, 2, and 3; Reach A Mitigation Site; and Guadalupe Creek Mitigation Site[1]	Species Expected to Occur in Segments 1, 2, and 3; Reach A Mitigation Site and Guadalupe Creek Mitigation Site[2]
Caprifoliaceae	*Sambucus mexicana*	Blue elderberry	UN	X	
	Symphoricarpos albus	Snowberry	FACU	X	
	Viburnum sp.	Viburnum	UN		X
Caryophyllaceae	*Stellaria media*	Common chickweed	FACU		X
Casuarinaceae	*Casuarina cunninghamiana*	Beefwood	–		X
Chenopodiaceae	*Atriplex patula* spp. *hastata*	Halberd-leaved saltplant	FACW		X
	Beta vulgaris	Beet	FACU		X
	Chenopodium album	Lambsquarter	FAC		X
	Chenopodium ambrosioides	Mexican tea	FAC		X
	Chenopodium sp.	Goosefoot	–		X
	Salsola kali	Russian thistle	UN		X
Cistaceae	*Helianthemum* sp.	Rush rose	–	X	
Convolvulaceae	*Convolvulus arvensis*	Bind weed	–	X	
Cucurbitaceae	*Marah fabaceus*	Man-root	–	X	
Cyperaceae	*Carex* sp.	Sedge	–		X
	Cyperus eragrostis	Umbrella-sedge	FACW	X	
	Cyperus esculentus	Yellow nutgrass, chufa	FACW		X
	Scirpus acutus	Viscid tule common bulrush	OBL	X	
	Scirpus californicus	California bulrush	OBL		X
	Scirpus microcarpus	Small-fruited bulrush	OBL		X

TABLE 1I-1. Vascular Plants Observed or Expected to Occur in the Project Area (Segments 1, 2, and 3), Reach A Mitigation Site and Guadalupe Creek Mitigation Site (continued)

Family	Species Name	Common Name	Indicator Status	Species Observed in Segments 1, 2, and 3; Reach A Mitigation Site; and Guadalupe Creek Mitigation Site[1]	Species Expected to Occur in Segments 1, 2, and 3; Reach A Mitigation Site and Guadalupe Creek Mitigation Site[2]
Dipsacaceae	*Dipsacus fullonum*	Fuller's teasel	–	X	
Equisetaceae	*Equisetum arvense*	Common horsetail	FAC	X	
Euphorbiaceae	*Eremocarpus setigerus*	Dove weed	–		X
	Euphorbia lathyris	Gopher spurge	–		X
	Ricinus communis	Castor bean	FACU	X	
Fabaceae	*Acacia* sp.	Acacia	–	X	
	Cytisus sp.	Broom	–		X
	Fumaria parviflora	Small-flowered Fumitory	–		X
	Lotus corniculatus	Bird's-foot trefoil	FAC	X	
	Medicago polymorpha	Bur-clover	(FACU-)	X	
	Melilotus alba	White sweetclover	FACU+		X
	Melilotus indica	Yellow sweetclover	FAC	X	
	Robinia pseudoacacia	Black locust	FAC*	X	
	Trifolium obtusiflorum	Creek clover	FAC*		X
	Trifolium tridentatum	Tomcat clover	–		X
	Vicia americana ssp. *americana*	American vetch	–		X
	Vicia dasycarpe	Thick-fruited vetch	–		X
Fagaceae	*Psoralea physudes*	California tea	–		X
	Quercus agrifolia	Coast live oak	(FACU)	X	
	Quercus douglasii	Blue oak	–		X

TABLE 1I-1. Vascular Plants Observed or Expected to Occur in the Project Area (Segments 1, 2, and 3), Reach A Mitigation Site and Guadalupe Creek Mitigation Site (continued)

Family	Species Name	Common Name	Indicator Status	Species Observed in Segments 1, 2, and 3; Reach A Mitigation Site; and Guadalupe Creek Mitigation Site[1]	Species Expected to Occur in Segments 1, 2, and 3; Reach A Mitigation Site and Guadalupe Creek Mitigation Site[2]
	Quercus Ilex	Holly Oak	–	X	
	Quercus lobata	Valley oak	FAC*	X	
	Quercus wislizenii	Interior live oak	–		X
Geraniaceae	*Erodium botrys*	Broadleaf filaree	–	X	
	Erodium cicutarium	Redstem filaree	–	X	
	Geranium dissectum	Dissected geranium	–	X	
Hippocastanaceae	*Aesculus californica*	California buckeye	–	X	
Hydrophyllaceae	*Heliotropium curassavicum*	Heliotrope	OBL	X	
	Pholistoma auritum	Common fiesta flower	–		X
Juglandaceae	*Juglans hindsii*	Northern California black walnut	FAC	X	
	Juglans regia	English walnut	–	X	
Juncaceae	*Juncus effusus*	Bog rush	OBL		
	Juncus sp.	Rush	UN	X	
Lamiaceae	*Marrubium vulgare*	White horehound	FAC	X	
	Mentha arevnis	Field mint	OBL		X
	Mentha spicata	Spearmint	OBL	X	
	Stachys sp.	Hedge-nettle	UN		X
Lauraceae	*Umbellularia californica* var. *californica*	California bay	FAC		X
Liliaceae	*Asparagus densiflurus*	Asparagus fern	FACU		X
	Chorogalum pomeridianum	Soap plant	–		X

TABLE 1I-1. Vascular Plants Observed or Expected to Occur in the Project Area (Segments 1, 2, and 3), Reach A Mitigation Site and Guadalupe Creek Mitigation Site (continued)

Family	Species Name	Common Name	Indicator Status	Species Observed in Segments 1, 2, and 3; Reach A Mitigation Site; and Guadalupe Creek Mitigation Site[1]	Species Expected to Occur in Segments 1, 2, and 3; Reach A Mitigation Site and Guadalupe Creek Mitigation Site[2]
Logariaceae	*Buddbia deridli*	Summer lilac	–		X
Lythraceae	*Lythrum hyssopifolia*	Hyssop loosestrife	FACW		X
Malvaceae	*Malva neglecta*	Mallow	–		X
	Malva parviflora	Cheeseweed	–	X	
	Sidalcea malviflora ssp. *malviflora*	Checker bloom	–		X
	Malva sp.	Mallow	UN		
Mimosaceae	*Mimosa* sp.	Mimosa	–		X
Moraceae	*Ficus* sp.	Fig	–	X	
	Morus sp.	Mulberry	–		X
Myrtaceae	*Eucalyptus globulus*	Blue gum	–	X	
Oleaceae	*Ligustrum lucidium*	Privet	–	X	
	Olea europea	Olive	–		X
Onagraceae	*Epilobium ciliatum*	Hairy willow-herb	FACW	X	
	Epilobium paniculatum	Panicled willow-herb	–	X	
	Ludwigia peploides	Creeping primrose	OBL	X	
	Oenothera hookeri	Hooker's evening primrose	–		X
	Zauschneria californica	California fuchsia	–		X
Oxalidaceae	*Oxalis pes-caprae*	Bermuda buttercup	–		X
Papaveraceae	*Eschscholzia californica*	California poppy	–		X
Pinaceae	*Pinus radiata*	Monterey pine	–		X

TABLE 1I-1. Vascular Plants Observed or Expected to Occur in the Project Area (Segments 1, 2, and 3), Reach A Mitigation Site and Guadalupe Creek Mitigation Site (continued)

Family	Species Name	Common Name	Indicator Status	Species Observed in Segments 1, 2, and 3; Reach A Mitigation Site; and Guadalupe Creek Mitigation Site[1]	Species Expected to Occur in Segments 1, 2, and 3; Reach A Mitigation Site and Guadalupe Creek Mitigation Site[2]
	Pinus sp.	Pine	UN	X	
Pittosporaceae	*Pittosporum tobira* sp.	Pittosporum	–		
Plantaginaceae	*Plantago lanceolata*	Narrowleaf plantain	FAC–	X	
	Plantago major	Broadleaf plantain	FACW–	X	
Platanaceae	*Platanus racemosa*	Western sycamore	FACW	X	
Poaceae	*Arundo donax*	Giant reed	FACW	X	
	Avena barbata	Slender wild oat	–	X	
	Avena fatua	Wild oat	–	X	
	Avena sativa	Oat	–		X
	Bromus carinatus	California brome	–		X
	Bromus diandrus	Ripgut grass	–	X	
	Bromus hordeaceus	Soft chess	FACU–	X	
	Bromus madritensis	Spanish brome	–	X	
	Cortedaria selloana	Pampas grass	–		X
	Crypsis schoenoides	Swampgrass	–		X
	Cynoden dactylon	Bermuda grass	FAC	X	
	Dactylis glomerata	Orchard grass	FACU	X	
	Echinochloa crusgalli	Barnyard grass	FACW	X	
	Glyceria leptostachya	Slim-head manna grass	OBL		X
	Hordeum murinum	Mediterranean barley	FAC	X	
	Hordeum murinum	Hare barley	NI		X

TABLE 1I-1. Vascular Plants Observed or Expected to Occur in the Project Area (Segments 1, 2, and 3), Reach A Mitigation Site and Guadalupe Creek Mitigation Site (continued)

Family	Species Name	Common Name	Indicator Status	Species Observed in Segments 1, 2, and 3; Reach A Mitigation Site; and Guadalupe Creek Mitigation Site[1]	Species Expected to Occur in Segments 1, 2, and 3; Reach A Mitigation Site and Guadalupe Creek Mitigation Site[2]
	Leptochloa fascicularis	Bearded sprangletop	FACW		
	Leymus tritocoides	Creeping rye-grass	FAC+	X	
	Lolium multiflorum	Italian ryegrass	FAC	X	
	Lolium perenne	Italian ryegrass	FAC	X	
	Melica californica	California melic grass	–	X	
	Oryzopsis miliacea	Indian rice grass	(FACU)		
	Paspalum dilatatum	Dallis grass	FAC	X	
	Paspalum distichum	Joint Dallis grass	OBL		X
	Phalaris canariensis	Canary grass	FACU	X	
	Pipotufherum miliaceum	Smilo grass	–	X	
	Poa annua	Annual bluegrass	FACW–	X	
	Polypogon monspeliensis	Rabbitsfoot grass	FACW+		
	Setaria glauca	Yellow bristlegrass	FAC		X
	Sorghum halepense	Johnson grass	FACU		X
	Stipa lepida	Foothill needlegrass	–		X
	Vulpia myuros	Rattail fescue	FACU*		
Polygonaceae	*Eriogonum* sp.	Buckwheat	–		X
	Polygonum areastrum	Prostrate knotweed	FAC	X	
	Polygonum aviculare	Common knotweed	FAC		X
	Polygonum coccineum var. *pratincola*	Water smartweed	UN	X	
	Polygonum hydropiperoides	Swamp smartweed	OBL	X	

TABLE 1I-1. Vascular Plants Observed or Expected to Occur in the Project Area (Segments 1, 2, and 3), Reach A Mitigation Site and Guadalupe Creek Mitigation Site (continued)

Family	Species Name	Common Name	Indicator Status	Species Observed in Segments 1, 2, and 3; Reach A Mitigation Site; and Guadalupe Creek Mitigation Site[1]	Species Expected to Occur in Segments 1, 2, and 3; Reach A Mitigation Site and Guadalupe Creek Mitigation Site[2]
	Polygonum lapathifolium	Willow smartweed	OBL	X	
	Polygonum punctatum	Water smartweed	OBL		
	Rumex conglomeratus	Clustered dock	FACW		X
	Rumex crispus	Curly dock	FACW-	X	
	Rumex pulcher	Fiddle dock	FAC+		X
	Montia perfoliata	Miner's lettuce	–		X
Portulaceae	*Portulaca oleraceus*	Common purslane	FAC		X
Primulaceae	*Anagallis arvensis*	Scarlet pimpernel	FAC		X
Ranunculaceae	*Clematis ligusticifolia*	Virgin's bower	FAC		X
	Ranunculus californicus	California buttercup	NI*		X
	Rhamnus alaterus	Italian Buckthron	–		X
Rhamnaceae	*Rhamnus californica* var. *californica*	California coffeeberry	–	X	
	Rhamnus crocea	Redberry	–		X
Rosaceae	*Cotoneaster* sp.	Cotoneaster	–		X
	Eriobotrya japonica	Loquat	–		X
	Heteromeles arbutifolia	Toyon	–	X	
	Malus sp.	Apple	–		X
	Prunus amygdalus	Almond	–	X	
	Prunus armenian	Apricot	–		X
	Prunus cerasifera	Cherry plum	–		X
	Prunus persica	Peach	–		X

TABLE 1I-1. Vascular Plants Observed or Expected to Occur in the Project Area (Segments 1, 2, and 3), Reach A Mitigation Site and Guadalupe Creek Mitigation Site (continued)

Family	Species Name	Common Name	Indicator Status	Species Observed in Segments 1, 2, and 3; Reach A Mitigation Site; and Guadalupe Creek Mitigation Site[1]	Species Expected to Occur in Segments 1, 2, and 3; Reach A Mitigation Site and Guadalupe Creek Mitigation Site[2]
	Purnus sp.		UN	X	
	Pyracantha sp.	Firethorn	UN		X
	Pyrus sp.	Pear	–		X
	Rosa californica	California wild rose	FAC+	X	
	Rubus discolor	Himalaya berry	FAC	X	
	Rubus ursinus	California wild blackberry	FACW*	X	
Rubiaceae	*Galium aparine*	Catchweed bedstraw	FACU		X
Rutaceae	*Citrus limon*	Lemon	–		X
	Citrus sinensis	Orange	–		X
Salicaceae	*Populus balsamifera* ssp. *trichocarpa.*	Black cottonwood	UN	X	
	Populus fremontii	Fremont cottonwood	FACW	X	
	Salix babylonica	Weeping willow	FACW-	X	
	Salix exigua	Narrow-leafed willow	FACW	X	
	Salix laevigata	Red willow	FACW	X	
	Salix lasiandra	Yellow willow	OBL	X	
	Salix lasiolepis	Arroyo willow	FACW	X	
Scrophulariaceae	*Kicksia spuria*	Fluellin	FAC	X	
	Mimulus guttatus ssp. *guttatus*	Common streamside monkeyflower	OBL		X
	Veronica americana	Brooklime	OBL	X	

TABLE 1I-1. Vascular Plants Observed or Expected to Occur in the Project Area (Segments 1, 2, and 3), Reach A Mitigation Site and Guadalupe Creek Mitigation Site (continued)

Family	Species Name	Common Name	Indicator Status	Species Observed in Segments 1, 2, and 3; Reach A Mitigation Site; and Guadalupe Creek Mitigation Site[1]	Species Expected to Occur in Segments 1, 2, and 3; Reach A Mitigation Site and Guadalupe Creek Mitigation Site[2]
	Veronica anagallis - aquatica	Common speedwell	OBL	X	
Simaroubaceae	*Ailanthus altissima*	Tree-of-heaven	FACU	X	
Solanaceae	*Nicotiana glauca*	Tree tobacco	FAC		
	Solanum	Nightshade	UN	X	
	Solanum americanum	White nightshade	FAC		X
Sparganiaceae	*Sparganium eurycarpum*	Giant burreed	OBL	X	
Tamaricaceae	*Tamarix* sp.	Tamarisk	FACW	X	
Taxodiaceae	*Sequoia sempervirens*	Coast redwood	–	X	
Typhaceae	*Typha angustifolia*	Slender cattail	OBL	X	
	Typha latifolia	Broad-leaved cattail, soft flag	OBL	X	
Ulmacea	*Ulmus* sp	Elm	UN		
Urticaceae	*Urtica dioica*	California creek nettle	FACW	X	
	Urtica holosericea	Hoary nettle	UN	X	
	Parietaria sp.	Pellitily	UN		X
Viscaceae	*Phoradendron villosum*	Oak mistletoe	–		X
Vitaceae	*Vitis californica*	California wild grape	FACW		X

TABLE 1I-1. Vascular Plants Observed or Expected to Occur in the Project Area (Segments 1, 2, and 3), Reach A Mitigation Site and Guadalupe Creek Mitigation Site (continued)

Family	Species Name	Common Name	Indicator Status	Species Observed in Segments 1, 2, and 3; Reach A Mitigation Site; and Guadalupe Creek Mitigation Site[1]	Species Expected to Occur in Segments 1, 2, and 3; Reach A Mitigation Site and Guadalupe Creek Mitigation Site[2]

Sources:

City of San Jose. 1989. Environmental Impact Report Guadalupe River Park. June. Final. Resolution Number 89-16. State Clearinghouse Number 88122017. Prepared by the City of San Jose Planning Commission. San Jose, CA.

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TABLE 1I-1. Vascular Plants Observed or Expected to Occur in the Project Area (Segments 1, 2, and 3), Reach A Mitigation Site and Guadalupe Creek Mitigation Site (continued)

Family	Species Name	Common Name	Indicator Status	Species Observed in Segments 1, 2, and 3; Reach A Mitigation Site; and Guadalupe Creek Mitigation Site[1]	Species Expected to Occur in Segments 1, 2, and 3; Reach A Mitigation Site and Guadalupe Creek Mitigation Site[2]

Notes:

This list of vascular plants was compiled during a review of the above referenced documents and does not represent a complete inventory of species expected to occur in Segments 1, 2, and 3; Reach A mitigation site; and Guadalupe Creek mitigation site.

[1] Wetland indicator status (Reed 1988):

[2] Species were not observed in the project area or offsite mitigation sites but are expected to occur in the study area.

OBL = obligate wetland species, occurs almost always in wetlands (>99 percent probability).

FACW = facultative wetland species, usually found in wetlands (67-99 percent probability).

FAC = facultative species, equally likely to occur in wetlands or nonwetlands (34-67 percent probability).

FACU = facultative upland species, usually occur in nonwetlands (67-99 percent probability).

UN = unknown

+ or - = symbols are modifiers that indicate greater or lesser affinity for wetland habitats.

NI = no indicator has been assigned due to a lack of information to determine indicator status.

* = a tentative assignment to that indicator status by Reed (1988).

– = indicates that no wetland indicator status has been given in Reed (1988).

TABLE 1I-2. Wildlife Species Observed or Expected to Occur in the Guadalupe River Project Area (Segments 1, 2, and 3), Reach A Mitigation Site, and Guadalupe Creek Mitigation Site

Common Name	Scientific Name	Species Observed in Segments 1, 2, and 3; Reach A Mitigation Site; and Guadalupe Creek Mitigation Site	Species Expected to Occur in Segments 1, 2, and 3; Reach A Mitigation Site; and Guadalupe Creek Mitigation Site[1]
	Mammals (Mammalia)		
Family: Opossums (Didelphidae)			
Virginia opossum	*Didelphis virginiana*	X	
Family: Shrews (Soricidae)			
Ornate shrew	*Sorex ornatus*	X	
Family: Moles (Talpidae)			
Broad-footed mole	*Scapanus latimanus*	X	
Family: Vespertilionid Bats (Vespertilionidae)			
Little brown myotis	Myotis lucifugus		X
Yuma myotis	Myotis yumanensis		X
Long-eared myotis	*Myotis evotis*		X
Fringed myotis	Myotis thysanodes		X
Long-legged myotis	*Myotis volans*		X
California myotis	*Myotis californicus*		X
Small-footed myotis	*Myotis leibii*		X
Silver-haired bat	*Lasionycteris noctivagans*		X
Western Pipistrelle	*Pipistrellus hesperus*		X
Big brown bat	*Eptesicus fuscus*		X
Red bat	*Lasiurus borealis*		X
Hoary bat	*Lasiurus cinereus*		X
Pallid bat	*Antrozous pallidus*		X
Townsend's western big-eared bat	*Plecotus townsendii townsendii*		X
Family: Free-Tailed Bats (Molossidae)			
Brazilian free-tailed bat	*Tadarida brasiliensis*		X
Greater western mastiff bat	*Eumops perotis californicus*		X
Family: Rabbits and Hares (Leporidae)			
Brush rabbit	*Sylvilagus bachmani*		X
Desert cottontail	*Sylvilagus audubonii*	X	

TABLE 1I-2. Wildlife Species Observed or Expected to Occur in the Guadalupe River Project Area (Segments 1, 2, and 3), Reach A Mitigation Site, and Guadalupe Creek Mitigation Site (continued)

Common Name	Scientific Name	Species Observed in Segments 1, 2, and 3; Reach A Mitigation Site; and Guadalupe Creek Mitigation Site	Species Expected to Occur in Segments 1, 2, and 3; Reach A Mitigation Site; and Guadalupe Creek Mitigation Site[1]
Mammals (Mammalia) (continued)			
Black-tailed hare	*Lepus californicus*	X	
Family: Squirrels, Chipmunks, and Marmots (Sciuridae)			
California ground squirrel	*Spermophilus beecheyi*	X	
Fox squirrel	*Sciurus niger*	X	
Eastern Gray Squirrel	*Sciurus carolinensis*	X	
Family: Pocket Gophers (Geomyidae)			
Botta's pocket gopher	*Thomomys bottae*	X	
Family: Kangaroo Rats And Pocket Mice (Heteromyidae)			
California pocket mouse	*Perognathus californicus*	X	
Family: Deer Mice, Voles, and Relatives (Cricetidae)			
Western harvest mouse	*Reithrodontomys megalotis*	X	
Deer mouse	*Peromyscus maniculatus*	X	
California vole	*Microtus californicus*	X	
Muskrat	*Ondatra zibethicus*	X	
Family: Old World Rats and Mice (Muridae)			
Black rat	*Rattus rattus*	X	
Norway rat	*Rattus norvegicus*	X	
House mouse	*Mus musculus*	X	
Carnivores (Carnivora)			
Family: Foxes, Wolves, And Relatives (Canidae)			
Coyote	*Canis latrans*		X
Gray fox	*Urocyon cinereoargenteus*		X
Red fox	*Vulpes vulpes*	X	
Family: Raccoons and Relatives (Procyonidae)			
Raccoon	*Procyon lotor*	X	
Family: Weasels, Badgers, and Relatives (Mustelidae)			
Long-tailed weasel	*Mustela frenata*	X	
Striped skunk	*Mephitis mephitis*	X	

TABLE 1I-2. Wildlife Species Observed or Expected to Occur in the Guadalupe River Project Area (Segments 1, 2, and 3), Reach A Mitigation Site, and Guadalupe Creek Mitigation Site (continued)

Common Name	Scientific Name	Species Observed in Segments 1, 2, and 3; Reach A Mitigation Site; and Guadalupe Creek Mitigation Site	Species Expected to Occur in Segments 1, 2, and 3; Reach A Mitigation Site; and Guadalupe Creek Mitigation Site[1]
	Mammals (Mammalia) (continued)		
Family: Cats (Felidae)			
Feral cat	Felis domesticus	X	
	Birds (Aves)		
Family: Grebes (Podicipedidae)			
Pied-billed grebe	*Podilymbus podiceps*	X	
Family: Cormorants (Phalacrocoracidae)			
Double-crested cormorant	*Phalacrocorax auritus*		X
Family: Herons and Bitterns (Ardeidae)			
Great blue heron	*Ardea herodias*	X	
Great egret	*Ardea alba*	X	
Snowy egret	*Egretta thula*	X	
Green heron	*Butorides virescens*	X	
Black-crowned night-heron	*Nycticorax nycticorax*	X	
Family: New World Vultures (Cathartidae)			
Turkey vulture	*Cathartes aura*	X	
Family: Swans, Geese, and Ducks (Anatidae)			
Gadwall	*Anas strepera*	X	
American wigeon	*Anas americana*	X	
Mallard	*Anas platyrhynchos*	X	
Cinnamon teal	*Anas cyanoptera*		X
Common merganser	*Mergus merganser*	X	
Family: Hawks, Kites, Harriers, and Eagles (Accipitridae)			
Osprey	*Pandion haliaetus*		X
White-tailed kite	*Elanus leucurus*		X
Sharp-shinned hawk	*Accipiter striatus*	X	
Cooper's hawk	*Accipiter cooperii*	X	
Red-shouldered hawk	*Buteo lineatus*	X	
Red-tailed hawk	*Buteo jamaicensis*	X	

TABLE 1I-2. Wildlife Species Observed or Expected to Occur in the Guadalupe River Project Area (Segments 1, 2, and 3), Reach A Mitigation Site, and Guadalupe Creek Mitigation Site (continued)

Common Name	Scientific Name	Species Observed in Segments 1, 2, and 3; Reach A Mitigation Site; and Guadalupe Creek Mitigation Site	Species Expected to Occur in Segments 1, 2, and 3; Reach A Mitigation Site; and Guadalupe Creek Mitigation Site[1]
	Birds (Aves) (continued)		
Family: Falcons (Falconidae)			
American kestrel	*Falco sparverius*	X	
Merlin	*Falco columbarius*	X	
Family: Quails (Odontophoridae)			
California quail	*Callipepla california*	X	
Family: Rails, Coots, and Gallinules (Rallidae)			
Virginia rail	*Rallus limicola*		X
Sora	*Porzana Carolina*		X
Common moorhen	*Gallinula chloropus*	X	
American coot	*Fulica americana*	X	
Family: Plovers and Relatives (Charadriidae)			
Killdeer	*Charadrius vociferus*	X	
Family: Sandpipers and Relatives (Scolopacidae)			
Greater yellowlegs	*Tringa melanoleuca*	X	
Lesser yellowlegs	*Tringa flavipes*		X
Spotted sandpiper	*Actitis macularia*		X
Least sandpiper	*Calidris minutilla*	X	
Common snipe	*Gallinago gallinago*	X	
Family: Gulls and Terns (Laridae)			
Ring-billed gull	*Larus delawarensis*	X	
California gull	*Larus californicus*	X	
Herring gull	*Larus argentatus*	X	
Caspian tern	*Sterna caspia*	X	
Forster's tern	*Sterna forsteri*	X	
Family: Pigeons and Doves (Columbidae)			
Rock dove	*Columba livia*	X	
Mourning dove	*Zenaida macroura*	X	
Family: Barn Owls (Tytonidae)			
Barn owl	*Tyto alba*	X	

TABLE 1I-2. Wildlife Species Observed or Expected to Occur in the Guadalupe River Project Area (Segments 1, 2, and 3), Reach A Mitigation Site, and Guadalupe Creek Mitigation Site (continued)

Common Name	Scientific Name	Species Observed in Segments 1, 2, and 3; Reach A Mitigation Site; and Guadalupe Creek Mitigation Site	Species Expected to Occur in Segments 1, 2, and 3; Reach A Mitigation Site; and Guadalupe Creek Mitigation Site[1]
	Birds (Aves) (continued)		
Family: Typical Owls (Strigidae)			
Western screech-owl	*Otus kennicottii*	X	
Burrowing owl	*Athene cunicularia*	X	
Long-eared owl	*Asio otus*	X	
Family: Swifts (Apodidae)			
Vaux's swift	*Chaetura vauxi*	X	
White-throated swift	*Aeronautes saxatalis*	X	
Family: Hummingbirds (Trochilidae)			
Black-chinned hummingbird	*Archilochus alexandri*		X
Anna's hummingbird	*Calypte anna*	X	
Rufous hummingbird	*Selasphorus rufus*	X	
Allen's hummingbird	*Selasphorus sasin*	X	
Family: Kingfishers (Alcedinidae)			
Belted kingfisher	*Ceryle alcyon*	X	
Family: Woodpeckers and Wrynecks (Picidae)			
Red-breasted sapsucker	*Sphyrapicus rubber*		X
Nuttall's woodpecker	*Picoides nuttallii*	X	
Downy woodpecker	*Picoides pubescens*	X	
Hairy woodpecker	*Picoides villosus*	X	
Northern flicker	*Colaptes auratus*	X	
Family: Tyrant Flycatchers (Tyrannidae)			
Western wood-pewee	*Contopus sordidulus*	X	
Willow flycatcher	*Empidonax traillii*	X	
Pacific-slope flycatcher	*Empidonax difficilis*	X	
Black phoebe	*Sayornis nigricans*	X	
Say's phoebe	*Sayornis saya*	X	
Ash-throated flycatcher	*Myiarchus cinerascens*		X
Western kingbird	*Tyrannus verticalis*		X

TABLE 1I-2. Wildlife Species Observed or Expected to Occur in the Guadalupe River Project Area (Segments 1, 2, and 3), Reach A Mitigation Site, and Guadalupe Creek Mitigation Site (continued)

Common Name	Scientific Name	Species Observed in Segments 1, 2, and 3; Reach A Mitigation Site; and Guadalupe Creek Mitigation Site	Species Expected to Occur in Segments 1, 2, and 3; Reach A Mitigation Site; and Guadalupe Creek Mitigation Site[1]
	Birds (Aves) (continued)		
Family: Shrikes (Laniidae)			
Family: Typical Vireos (Vireonidae)			
Plumbeous vireo	*Vireo plumbeus*		X
Hutton's vireo	*Vireo huttoni*	X	
Warbling vireo	*Vireo gilvus*	X	
Family: Jays, Magpies, and Crows (Corvidae)			
Western scrub-jay	*Aphelocoma californica*	X	
American crow	*Corvus brachyrhynchos*	X	
Common raven	*Corvus corax*	X	
Family: Swallows (Hirundinidae)			
Purple martin	*Progne subis*	X	
Tree swallow	*Tachycineta bicolor*	X	
Violet-green swallow	*Tachycineta thalassina*	X	
Northern rough-winged swallow	*Stelgidopteryx serripennis*	X	
Cliff swallow	*Petrochelidon pyrrhonota*	X	
Barn swallow	*Hirundo rustica*	X	
Family: Titmice and Relatives (Paridae)			
Chestnut-backed chickadee	*Poecile rufescens*	X	
Oak titmouse	*Baeolophus inornatus*	X	
Family: Bushtit (Aegithalidae)			
Bushtit	*Psaltriparus minimus*	X	
Family: Wrens (Troglodytidae)			
Bewick's wren	*Thryomanes bewickii*	X	
House wren	*Troglodytes aedon*	X	
Winter wren	*Troglodytes troglodytes*	X	
Marsh wren	*Cistothorus palustris*	X	
Family: Kinglets (Regulidae)			
Ruby-crowned kinglet	*Regulus calendula*	X	

TABLE 1I-2. Wildlife Species Observed or Expected to Occur in the Guadalupe River Project Area (Segments 1, 2, and 3), Reach A Mitigation Site, and Guadalupe Creek Mitigation Site (continued)

Common Name	Scientific Name	Species Observed in Segments 1, 2, and 3; Reach A Mitigation Site; and Guadalupe Creek Mitigation Site	Species Expected to Occur in Segments 1, 2, and 3; Reach A Mitigation Site; and Guadalupe Creek Mitigation Site[1]
	Birds (Aves) (continued)		
Family: Thrushes (Turdidae)			
Hermit thrush	*Catharus guttatus*	X	
American robin	*Turdus migratorius*	X	
Family: Mockingbirds and Thrashers (Mimidae)			
Northern mockingbird	*Mimus polyglottos*	X	
Family: Starlings (Sturnidae)			
European starlin	*Sturnus vulgaris*	X	
Family: Pipits (Motacillidae)			
American pipit	*Anthus rubescens*	X	
Family: Waxwings (Bombycillidae)			
Cedar waxwing	*Bombycilla cedrorum*	X	
Family: Wood Warblers (Parulidae)			
Orange-crowned warbler	*Vermivora celata*	X	
Yellow warbler	*Dendroica petechia*	X	
Yellow-rumped warbler	*Dendroica coronata*	X	
MacGillivray's warbler	*Oporornis tolmiei*	X	
Common yellowthroat	*Geothlypis trichas*	X	
Wilson's warbler	*Wilsonia pusilla*	X	
Family: Tanagers (Thraupidae)			
Western tanager	*Piranga ludoviciana*	X	
Family: Towhees and Sparrows (Emberizidae)			
Spotted towhee	*Pipilo maculatus*		X
California towhee	*Pipilo crissalis*	X	
Chipping sparrow	*Spizella passerina*	X	
Savannah sparrow	*Passerculus sandwichensis*	X	
Fox sparrow	*Passerella iliaca*	X	
Song sparrow	*Melospiza melodia*	X	
Lincoln's sparrow	*Melospiza lincolnii*	X	
Golden-crowned sparrow	*Zonotrichia atricapilla*	X	

TABLE 1I-2. Wildlife Species Observed or Expected to Occur in the Guadalupe River Project Area (Segments 1, 2, and 3), Reach A Mitigation Site, and Guadalupe Creek Mitigation Site (continued)

Common Name	Scientific Name	Species Observed in Segments 1, 2, and 3; Reach A Mitigation Site; and Guadalupe Creek Mitigation Site	Species Expected to Occur in Segments 1, 2, and 3; Reach A Mitigation Site; and Guadalupe Creek Mitigation Site[1]
	Birds (Aves) (continued)		
Dark-eyed junco	*Junco hyemalis*	X	
Family: Blackbirds and Orioles (Icteridae)			
Red-winged blackbird	*Agelaius phoeniceus*	X	
Western meadowlark	*Sturnella neglecta*	X	
Brewer's blackbird	*Euphagus cyanocephalus*	X	
Brown-headed cowbird	*Molothrus ater*	X	
Hooded oriole	*Icterus cucullatus*		X
Bullock's oriole	*Icterus bullockii*	X	
Family: Finches (Fringillidae)			
Purple finch	*Carpodacus purpureus*	X	
House finch	*Carpodacus mexicanus*	X	
Pine siskin	*Carduelis pinus*	X	
Lesser goldfinch	*Carduelis psaltria*	X	
American goldfinch	*Carduelis tristis*	X	
Family: Weaver Finches (Passeridae)			
House sparrow	*Passer domesticus*	X	
	Turtles, Lizards, and Snakes (Reptilia)		
Family: Pond Turtles (Emydidae)			
Western pond turtle	*Clemmys marmorata*	X	
Red-eared slider	*Pseudemys scripta*	X	
Family: Iguanids (Iguanidae)			
Western fence lizard	*Sceloporus occidentalis*	X	
Family: Skinks (Scincidae)			
Western skink	*Eumeces skiltonianus*	X	
Family: Alligator Lizards (Anguidae)			
Southern alligator lizard	*Gerrhonotus multicarinatus*	X	
Family: Legless Lizards (Anniellidae)			
Family: Colubrids (Colubridae)			
Ringneck snake	*Diadophis punctatus*	X	

TABLE 11-2. Wildlife Species Observed or Expected to Occur in the Guadalupe River Project Area (Segments 1, 2, and 3), Reach A Mitigation Site, and Guadalupe Creek Mitigation Site (continued)

Common Name	Scientific Name	Species Observed in Segments 1, 2, and 3; Reach A Mitigation Site; and Guadalupe Creek Mitigation Site	Species Expected to Occur in Segments 1, 2, and 3; Reach A Mitigation Site; and Guadalupe Creek Mitigation Site[1]
Turtles, Lizards, and Snakes (Reptilia) (continued)			
California whipsnake	*Masticophis lateralis*	X	
Gopher snake	*Pituophis melanoleucus*	X	
Common kingsnake	*Lampropeltis getulus*	X	
Common garter snake	*Thamnophis sirtalis*	X	
Western terrestrial garter snake	*Thamnophis elegans*	X	
Santa Cruz garter snake	*Thamnophis atratus*	X	
Salamanders, Toads, and Frogs (Amphibia)			
Family: Lungless Salamanders (Plethodontidae)			
Ensatina	*Ensatina eschscholtzi*	X	
California slender salamander	*Batrachoseps attenuatus*	X	
Black salamander	*Aneides flavipunctatus*	X	
Arboreal salamander	*Aneides lugubris*	X	
Family: True Toads (Bufonidae)			
Western toad	*Bufo boreas*	X	
Family: Treefrogs (Hylidae)			
Pacific chorus frog	*Hyla regilla*	X	
Family: True Frogs (Ranidae)			
Bullfrog	*Rana catesbeiana*	X	

TABLE 1I-2. Wildlife Species Observed or Expected to Occur in the Guadalupe River Project Area (Segments 1, 2, and 3), Reach A Mitigation Site, and Guadalupe Creek Mitigation Site (continued)

Common Name	Scientific Name	Species Observed in Segments 1, 2, and 3; Reach A Mitigation Site; and Guadalupe Creek Mitigation Site	Species Expected to Occur in Segments 1, 2, and 3; Reach A Mitigation Site; and Guadalupe Creek Mitigation Site[1]

Sources:
City of San Jose. 1989. Environmental Impact Report Guadalupe River Park. June. Final. Resolution Number 89-16. State Clearinghouse District. 1997. Lower Guadalupe River 1996 Bat Survey. Draft. Prepared by Santa Clara Valley Water District, San Jose, CA.

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Jones & Stokes Associates, Inc. 1997. Summary of fish sampling and water quality on the Lower Guadalupe River (Alviso Marina to Interstate-880). (JSA97-217.) December. Sacramento, CA. Prepared for the Santa Clara Valley Water District, San Jose, CA.Number 88122017. Prepared by the City of San Jose Planning Commission. San Jose, CA.

Santa Clara Valley Water

H.T. Harvey and Associates. 1995. Spreader dam component of the instream recharge program. Environmental impact report. Biological resources section. March. Prepared for the Santa Clara Valley Water District, San Jose, CA.

Santa Clara Valley Water District and U.S. Army Corps of Engineers. In press. Final environmental impact report/statement for the Upper Guadalupe River Flood Control Project. San Jose, California. In press.

Santa Clara Valley Water District and U.S. Army Corps of Engineers. 1997. Draft feasibility report and environmental impact statement/report. Upper Guadalupe River feasibility study. August.

U.S. Department of Transportation and California Department of Transportation. 1993. Final environmental impact statement/report. Route 87 freeway project. Julian Street to Route 101. September.

Notes:
This list of wildlife species was compiled during a review of the above referenced documents and does not represent a complete inventory of species expected to occur in Segments 1, 2, and 3; Reach A mitigation site; and Guadalupe Creek mitigation site.

1. Species were not observed in the project area or offsite mitigation sites but are expected to occur in the study area.

TABLE 1I-3. Fish Species Observed or Expected to Occur in the Guadalupe River Project Area (Segments 1, 2, and 3), Reach A Mitigation Site, and Guadalupe Creek Mitigation Site

Common Name	Scientific Name	Species Observed in Project Area and/or Offsite Mitigation Areas	Species Expected to Occur in Project Area and/or Offsite Mitigation Areas[1]
Family: Lampreys (Petromyzonidae)			
Pacific lamprey	Lampetra tridentata	X	
Family: Trouts, Salmons, and Chars (Salmonidae)			
Rainbow trout (steelhead)	*Oncorhynchus mykiss*	X	
Chinook salmon	*Oncorhynchus tshawytscha*	X	
Family: Herrings (Clupeidae)			
Threadfin shad	Dorosoma petenense	X	
Family: Minnows (Cyprinidae)			
California roach	*Hesperoleucus symmetricus*	X	
Hitch	*Lavinia exilicauda*	X	
Golden shiner	*Notemigonus crysaleucas*		X
Fathead minnow	*Pimephales promelas*	X	
Redshiner	*Notropis lutrensis*	X	
Goldfish	*Carassius auratus*	X	
Carp	*Cyprinus carpio*	X	
Family: Suckers (Catostomidae)			
Sacramento sucker	*Catostomus occidentalis*	X	
Family: Catfishes (Ictaluridae)			
Black bullhead	*Ictalurus melas*		X
Brown bullhead	*Ictalurus nebulosus*		X
Channel catfish	*Ictalurus punctatus*		X
Family: Killifishes (Cyprinodontidae)			
Rainwater killifish	*Lucania parva*		X
Family: Livebearers (Poeciliidae)			
Mosquitofish	*Gambusia affinis*	X	
Family: Silversides (Atherinidae)			
Inland silverside	*Menidia audens*		X
Threespine stickleback	*Gasterosteus aculeatus* ssp.		X

TABLE 11-3.(Continued)

Common Name	Scientific Name	Species Observed in Project Area and/or Offsite Mitigation Areas	Species Expected to Occur in Project Area and/or Offsite Mitigation Areas[1]
Family: Sunfishes (Centrarchidae) (continued)			
Bluegill	*Lepomis macrochirus*		X
Redear sunfish	*Lepomis microlophus*	X	
Pumpkinseed	*Lepomis gibbosus*	X	
Green sunfish	*Lepomois cyanellus*	X	
Redear x Green sunfish	*Sunfish hybrid*	X	
Pumpkinseed x Green sunfish	*Sunfish hybrid*		
Largemouth bass	*Micropterus salmoides*	X	
Smallmouth bass	*Micropterus dolomieui*		X
Family: Temperate Basses (Percichthyidae)			
Striped bass	*Morone saxatilis*	X	
Family: Gobies (Gobiidae)			
Yellowfin goby	*Acanthogobius flavimanus*	X	
Family: Sculpins (Cottidae)			
Prickly sculpin	*Cottus asper*	X	
Riffle sculpin	*Cottus gulosus*		X
Pacific staghorn sculpin	*Leptocottus armatus*	X	

Sources:

Jones & Stokes Associates, Inc. 1997. Summary of fish sampling and water quality on the Lower Guadalupe River (Alviso Marina to Interstate-880). (JSA97-217.) December. Sacramento, CA. Prepared for the Santa Clara Valley Water District, San Jose, CA.

City of San Jose. 1989. Environmental Impact Report Guadalupe River Park. June. Final. Resolution Number 89-16. State Clearinghouse Number 88122017. Prepared by the City of San Jose Planning Commission. San Jose, CA.

H.T. Harvey and Associates. 1995. Spreader dam component of the instream recharge program. Environmental impact report. Biological resources section. March. Prepared for the Santa Clara Valley Water District, San Jose, CA.

Santa Clara Valley Water District and U.S. Army Corps of Engineers. 2000. Final environmental impact report/statement for the Upper Guadalupe River Flood Control Project. San Jose, California. In press.

Santa Clara Valley Water District and U.S. Army Corps of Engineers. 1997. Draft feasibility report and environmental impact statement/report. Upper Guadalupe River feasibility study. August.

U.S. Department of Transportation and California Department of Transportation. 1993. Final environmental impact statement/report. Route 87 freeway project. Julian Street to Route 101. September.

Notes:

This list of fish species was compiled during a review of the above referenced documents and does not represent a complete inventory of species expected to occur in Segments 1, 2, and 3; Reach A mitigation site; and Guadalupe Creek mitigation site.

[1] Species were not observed in the project area or offsite mitigation sites but are expected to occur in the study area.

APPENDIX 1J

Special–Status Species Information

APPENDIX 1J-1. U.S. Fish and Wildlife Service Species List for Guadalupe River Watershed Area
Endangered and Threatened Species that May Occur in or be Affected in the Area of Santa Clara County.
Reference File Nos. 1-1-99-SP-2052 – September 23, 1999 and 00-SP-1905 – June 1, 2000

SANTA CLARA COUNTY	
Listed Species	
Mammals	
salt marsh harvest mouse	*Reithrodontomys raviventris* (E)
San Joaquin kit fox	*Vulpes macrotis mutica* (E)
riparian brush rabbit	*Sylvilagus bachmani riparius* (E) *
Birds	
California brown pelican	*Pelecanus occidentalis californicus* (E)
California clapper rail	*Rallus longirostris obsoletus* (E)
California least tern	*Sterna antillarum (=albifrons) browni* (E)
marbled murrelet	*Brachyramphus marmoratus* (T)
western snowy plover	*Charadrius alexandrinus nivosus* (T)
bald eagle	*Haliaeetus leucocephalus* (T)
Reptiles	
San Francisco garter snake	*Thamnophis sirtalis tetrataenia* (E)
giant garter snake	*Thamnophis gigas* (T)
Amphibians	
California red-legged frog	*Rana aurora draytonii* (T)
Fish	
tidewater goby	*Eucyclogobius newberryi* (E)
winter-run chinook salmon	*Oncorhynchus tshawytscha* (E)
delta smelt	*Hypomesus transpacificus* (T)
Central California steelhead	*Oncorhynchus mykiss* (T)
South Central California steelhead	*Oncorhynchus mykiss* (T)
Central Valley spring-run chinook salmon	crit. hab. *Oncorhynchus tshawytscha* (T)
Central Valley spring-run chinook salmon	*Oncorhynchus tshawytscha* (T)
Sacramento splittail	*Pogonichthys macrolepidotus* (T)
Invertebrates	
vernal pool fairy shrimp	*Branchinecta lynchi* (T)
bay checkerspot butterfly	*Euphydryas editha bayensis* (T)
Plants	
Tiburon paintbrush	*Castilleja affinis* ssp. *neglecta* (E)
Coyote ceanothus	*Ceanothus ferrisae* (E)

APPENDIX 1J-1. U.S. Fish and Wildlife Service Species List for Guadalupe River Area (continued)

SANTA CLARA COUNTY

Listed Species

Santa Clara Valley dudleya	*Dudleya setchellii* (E)
Metcalf Canyon jewelflower	*Streptanthus albidus* ssp. *albidus* (E)
robust spineflower	*Chorizanthe robusta* (E) *
Contra Costa goldfields	*Lasthenia conjugens* (E) *
California sea blite	*Suaeda californica* (E) *
showy Indian clover	*Trifolium amoenum* (E) *

Proposed Species

Birds

mountain plover	Charadrius montanus (PT)

Candidate Species

Amphibians

California tiger salamander	*Ambystoma californiense* (C)

Fish

Central Valley fall/late fall-run chinook salmon	critical habitat, *Oncorhynchus tshawytscha* (C)
Central Valley fall/late fall-run chinook salmon	*Oncorhynchus tshawytscha* (C)

Species of Concern

Mammals

Pacific western big-eared bat	*Corynorhinus (=Plecotus) townsendii townsendii* (SC)
greater western mastiff-bat	*Eumops perotis californicus* (SC)
small-footed myotis bat	*Myotis ciliolabrum* (SC)
long-eared myotis bat	*Myotis evotis* (SC)
fringed myotis bat	*Myotis thysanodes* (SC)
long-legged myotis bat	*Myotis volans* (SC)
Yuma myotis bat	*Myotis yumanensis* (SC)
San Francisco dusky-footed woodrat	*Neotoma fuscipes annectens* (SC)
salt marsh vagrant shrew	*Sorex vagrans halicoetes* (SC)

Birds

American peregrine falcon	*Falco peregrinus anatum* (D)
tricolored blackbird	*Agelaius tricolor* (SC)
grasshopper sparrow	*Ammodramus savannarum* (SC)
Bell's sage sparrow	*Amphispiza belli belli* (SC)
short-eared owl	*Asio flammeus* (SC)
western burrowing owl	*Athene cunicularia hypugea* (SC)

APPENDIX 1J-1. U.S. Fish and Wildlife Service Species List for Guadalupe River Area (continued)

SANTA CLARA COUNTY	
Listed Species	
American bittern	*Botaurus lentiginosus* (SC)
ferruginous hawk	*Buteo regalis* (SC)
Lawrence's goldfinch	*Carduelis lawrencei* (SC)
Vaux's swift	*Chaetura vauxi* (SC)
lark sparrow	*Chondestes grammacus* (SC)
olive-sided flycatcher	*Contopus cooperi* (SC)
hermit warbler	*Dendroica occidentalis* (SC)
white-tailed (=black shouldered) kite	*Elanus leucurus* (SC)
Pacific-slope flycatcher	*Empidonax difficilis* (SC)
common loon	*Gavia immer* (SC)
salt marsh common yellowthroat	*Geothlypis trichas sinuosa* (SC)
least bittern western	*Ixobrychus exilis hesperis* (SC)
loggerhead shrike	*Lanius ludovicianus* (SC)
Lewis' woodpecker	*Melanerpes lewis* (SC)
Alameda (South Bay) song sparrow	*Melospiza melodia pusillula* (SC)
long-billed curlew	*Numenius americanus* (SC)
rufous hummingbird	*Selasphorus rufus* (SC)
Allen's hummingbird	*Selasphorus sasin* (SC)
red-breasted sapsucker	*Sphyrapicus ruber* (SC)
Bewick's wren	*Thryomanes bewickii* (SC)
California Thrasher	*Toxostoma redivivum* (SC)
Reptiles	
silvery legless lizard	*Anniella pulchra pulchra* (SC)
northwestern pond turtle	*Clemmys marmorata marmorata* (SC)
southwestern pond turtle	*Clemmys marmorata pallida* (SC)
San Joaquin coachwhip (=whipsnake)	*Masticophis flagellum ruddocki* (SC)
California horned lizard	*Phrynosoma coronatum frontale* (SC)
Amphibians	
foothill yellow-legged frog	*Rana boylii* (SC)
western spadefoot toad	*Scaphiopus hammondii* (SC)
Fish	
green sturgeon	*Acipenser medirostris* (SC)
longfin smelt	*Spirinchus thaleichthys* (SC)

APPENDIX 1J-1. U.S. Fish and Wildlife Service Species List for Guadalupe River Area (continued)

SANTA CLARA COUNTY	
Listed Species	
Invertebrates	
Opler's longhorn moth	*Adela oplerella* (SC)
Ricksecker's water scavenger beetle	*Hydrochara rickseckeri* (SC)
California linderiella	*Linderiella occidentalis* (SC)
unsilvered fritillary butterfly	*Speyeria adiaste adiaste* (SC)
Plants	
Mt. Hamilton harebell	*Campanula sharsmithiae* (SC)
Mt. Hamilton thistle	*Cirsium fontinale* var. *campylon* (SC)
South Bay clarkia	*Clarkia concinna* ssp. *automixa* (SC)
Mt. Hamilton coreopsis	*Coreopsis hamiltonii* (SC)
clustered lady's-slipper	*Cypripedium fasciculatum* (SC)
interior California larkspur	*Delphinium californicum* ssp. *interius* (SC)
Brandegee's woolly-star	*Eriastrum brandegeae* (SC)
Hoover's button-celery	*Eryngium aristulatum* var. *hooveri* (SC)
San Francisco wallflower	*Erysimum franciscanum* (SC)
talus fritillary	*Fritillaria falcata* (SC)
fragrant fritillary	*Fritillaria liliacea* (SC)
delta tule-pea	*Lathyrus jepsonii* var. *jepsonii* (SC)
smooth lessingia	*Lessingia micradenia* var. *glabrata* (SC)
Gairdner's yampah	*Perideridia gairdneri* ssp. *gairdneri* (SC)
Mt. Diablo phacelia	*Phacelia phacelioides* (SC)
Salinas Valley popcornflower	*Plagiobothrys uncinatus* (SC)
rock sanicle	*Sanicula saxatilis* (SC)
most beautiful (uncommon) jewelflower	*Streptanthus albidus* ssp. *peramoenus* (SC)
Mt. Hamilton jewelflower	*Streptanthus callistus* (SC)
alkali milk-vetch	*Astragalus tener* var. *tener* (SC) *
valley spearscale	*Atriplex joaquiniana* (SC) *
northcoast bird's-beak	*Cordylanthus maritimus* ssp. *palustris* (SC) *
caper-fruited tropidocarpum	*Tropidocarpum capparideum* (SC) **
pappose spikeweed	*Hemizonia parryi* ssp. *congdonii* (SC) *
San Francisco Bay spineflower	*Chorizanthe cuspidata* var. *cuspidata* (SC)

APPENDIX 1J-1. U.S. Fish and Wildlife Service Species List for Guadalupe River Area (continued)

SANTA CLARA COUNTY

Listed Species

KEY:

(E)	Endangered	Listed (in the Federal Register) as being in danger of extinction.
(T)	Threatened	Listed as likely to become endangered within the foreseeable future.
(P)	Proposed	Officially proposed (in the Federal Register) for listing as endangered or threatened.
(C)	Candidate	Candidate to become a proposed species.
(SC)	Species of Concern	Other species of concern to the Service.
(D)	Delisted	Delisted. Status to be monitored for 5 years.
(*)	Extirpated	Possibly extirpated from the area.
(**)	Extinct	Possibly extinct

Critical Habitat   Area essential to the conservation of a species.

APPENDIX 1J-2. U.S. Fish and Wildlife Service Species List for Guadalupe River Area
Endangered and Threatened Species that May Occur in or be Affected in the Selected Quads Listed Below.
Reference File Nos. 1-1-99-SP-2052 - September 23, 1999 and 00-SP-1905 – June 1, 2000

QUAD: 407A SANTA TERESA HILLS

Listed Species

Mammals

San Joaquin kit fox	*Vulpes macrotis mutica* (E)

Birds

marbled murrelet	*Brachyramphus marmoratus* (T)
bald eagle	*Haliaeetus leucocephalus* (T)

Amphibians

California red-legged frog	*Rana aurora draytonii* (T)

Fish

delta smelt	*Hypomesus transpacificus* (T)
Central California steelhead	*Oncorhynchus mykiss* (T)
Sacramento splittail	*Pogonichthys macrolepidotus* (T)

Invertebrates

bay checkerspot butterfly	*Euphydryas editha bayensis* (T)

Plants

Santa Clara Valley dudleya	*Dudleya setchellii* (E)
Metcalf Canyon jewelflower	*Streptanthus albidus* ssp. *albidus* (E) *

Proposed Species

Mammals

riparian brush rabbit	*Sylvilagus bachmani riparius* (PE) *

Candidate Species

Amphibians

California tiger salamander	*Ambystoma californiense* (C)

Species of Concern

Mammals

Pacific western big-eared bat	*Corynorhinus (=Plecotus) townsendii townsendii* (SC)
greater western mastiff-bat	*Eumops perotis californicus* (SC)
small-footed myotis bat	*Myotis ciliolabrum* (SC)
long-eared myotis bat	*Myotis evotis* (SC)
fringed myotis bat	*Myotis thysanodes* (SC)
long-legged myotis bat	*Myotis volans* (SC)
Yuma myotis bat	*Myotis yumanensis* (SC)

APPENDIX 1J-2. U.S. Fish and Wildlife Service Species List for Guadalupe River Project Area (continued)

QUAD: 407A SANTA TERESA HILLS	
San Francisco dusky-footed woodrat	*Neotoma fuscipes annectens* (SC)
Birds	
American peregrine falcon	*Falco peregrinus anatum* (D)
Bell's sage sparrow	*Amphispiza belli belli* (SC)
western burrowing owl	*Athene cunicularia hypugea* (SC)
ferruginous hawk	*Buteo regalis* (SC)
Reptiles	
silvery legless lizard	*Anniella pulchra pulchra* (SC)
northwestern pond turtle	*Clemmys marmorata marmorata* (SC)
southwestern pond turtle	*Clemmys marmorata pallida* (SC)
California horned lizard	*Phrynosoma coronatum frontale* (SC)
Amphibians	
foothill yellow-legged frog	*Rana boylii* (SC)
western spadefoot toad	*Scaphiopus hammondii* (SC)
Fish	
longfin smelt	*Spirinchus thaleichthys* (SC)
Invertebrates	
Opler's longhorn moth	*Adela oplerella* (SC)
Ricksecker's water scavenger beetle	*Hydrochara rickseckeri* (SC)
unsilvered fritillary butterfly	*Speyeria adiaste adiaste* (SC)
Plants	
Mt. Hamilton thistle	*Cirsium fontinale* var. *campylon* (SC)
smooth lessingia	*Lessingia micradenia* var. *glabrata* (SC)
most beautiful (uncommon) jewelflower	*Streptanthus albidus* ssp. *peramoenus* (SC)
QUAD: 407B LOS GATOS	
Listed Species	
Birds	
marbled murrelet	*Brachyramphus marmoratus* (T)
bald eagle	*Haliaeetus leucocephalus* (T)
Amphibians	
California red-legged frog	*Rana aurora draytonii* (T)
Fish	
tidewater goby	*Eucyclogobius newberryi* (E)
delta smelt	*Hypomesus transpacificus* (T)

APPENDIX 1J-2. U.S. Fish and Wildlife Service Species List for Guadalupe River Project Area (continued)

Central California steelhead	*Oncorhynchus mykiss* (T)
Sacramento splittail	*Pogonichthys macrolepidotus* (T)
Invertebrates	
bay checkerspot butterfly	*Euphydryas editha bayensis* (T)
Plants	
robust spineflower	*Chorizanthe robusta* (E) *
Santa Clara Valley dudleya	*Dudleya setchellii* (E)
Metcalf Canyon jewelflower	*Streptanthus albidus* ssp. *albidus* (E)
Candidate Species	
Amphibians	
California tiger salamander	*Ambystoma californiense* (C)
Species of Concern	
Mammals	
Pacific western big-eared bat	Corynorhinus (=Plecotus) townsendii townsendii (SC)
greater western mastiff-bat	Eumops perotis californicus (SC)
small-footed myotis bat	*Myotis ciliolabrum* (SC)
long-eared myotis bat	*Myotis evotis* (SC)
fringed myotis bat	*Myotis thysanodes* (SC)
long-legged myotis bat	*Myotis volans* (SC)
Yuma myotis bat	*Myotis yumanensis* (SC)
San Francisco dusky-footed woodrat	*Neotoma fuscipes annectens* (SC)
Birds	
American peregrine falcon	*Falco peregrinus anatum* (D)
tricolored blackbird	*Agelaius tricolor* (SC)
Bell's sage sparrow	*Amphispiza belli belli* (SC)
ferruginous hawk	*Buteo regalis* (SC)
Reptiles	
silvery legless lizard	*Anniella pulchra pulchra* (SC)
southwestern pond turtle	*Clemmys marmorata pallida* (SC)
California horned lizard	*Phrynosoma coronatum frontale* (SC)
Amphibians	
foothill yellow-legged frog	*Rana boylii* (SC)
western spadefoot toad	*Scaphiopus hammondii* (SC)
Fish	
Pacific lamprey	*Lampetra tridentata* (SC)

APPENDIX 1J-2. U.S. Fish and Wildlife Service Species List for Guadalupe River Project Area (continued)

longfin smelt	*Spirinchus thaleichthys* (SC)
Invertebrates	
Opler's longhorn moth	*Adela oplerella* (SC)
Ricksecker's water scavenger beetle	*Hydrochara rickseckeri* (SC)
unsilvered fritillary butterfly	*Speyeria adiaste adiaste* (SC)
Plants	
Mt. Hamilton thistle	*Cirsium fontinale* var. *campylon* (SC)
South Bay clarkia	*Clarkia concinna* ssp. *automixa* (SC)
fragrant fritillary	*Fritillaria liliacea* (SC)
smooth lessingia	*Lessingia micradenia* var. *glabrata* (SC)
most beautiful (uncommon) jewelflower	*Streptanthus albidus* ssp. *peramoenus* (SC)
QUAD: 427C SAN JOSE WEST	
Listed Species	
Birds	
California clapper rail	*Rallus longirostris obsoletus* (E)
Amphibians	
California red-legged frog	*Rana aurora draytonii* (T)
Fish	
winter-run chinook salmon	*Oncorhynchus tshawytscha* (E)
delta smelt	*Hypomesus transpacificus* (T)
Central California steelhead	*Oncorhynchus mykiss* (T)
Central Valley spring-run chinook salmon	*Oncorhynchus tshawytscha* (T)
Sacramento splittail	*Pogonichthys macrolepidotus* (T)
Invertebrates	
bay checkerspot butterfly	*Euphydryas editha bayensis* (T)
Plants	
robust spineflower	*Chorizanthe robusta* (E) *
Candidate Species	
Amphibians	
California tiger salamander	Ambystoma californiense (C)
Fish	
Central Valley fall/late fall-run chinook salmon	Oncorhynchus tshawytscha (C)
Species of Concern	
Mammals	
Pacific western big-eared bat	*Corynorhinus (=Plecotus) townsendii townsendii* (SC)
greater western mastiff-bat	*Eumops perotis californicus* (SC)

APPENDIX 1J-2. U.S. Fish and Wildlife Service Species List for Guadalupe River Project Area (continued)

small-footed myotis bat	*Myotis ciliolabrum* (SC)
long-eared myotis bat	*Myotis evotis* (SC)
fringed myotis bat	*Myotis thysanodes* (SC)
long-legged myotis bat	*Myotis volans* (SC)
Yuma myotis bat	*Myotis yumanensis* (SC)
San Francisco dusky-footed woodrat	*Neotoma fuscipes annectens* (SC)
Birds	
American peregrine falcon	*Falco peregrinus anatum* (D)
tricolored blackbird	*Agelaius tricolor* (SC)
Bell's sage sparrow	*Amphispiza belli belli* (SC)
western burrowing owl	*Athene cunicularia hypugea* (SC)
ferruginous hawk	*Buteo regalis* (SC)
salt marsh common yellowthroat	*Geothlypis trichas sinuosa* (SC)
Reptiles	
silvery legless lizard	*Anniella pulchra pulchra* (SC)
northwestern pond turtle	*Clemmys marmorata marmorata* (SC)
southwestern pond turtle	*Clemmys marmorata pallida* (SC)
California horned lizard	*Phrynosoma coronatum frontale* (SC)
Amphibians	
foothill yellow-legged frog	*Rana boylii* (SC)
western spadefoot toad	*Scaphiopus hammondii* (SC)
Fish	
longfin smelt	*Spirinchus thaleichthys* (SC)
Invertebrates	
Opler's longhorn moth	*Adela oplerella* (SC)
Ricksecker's water scavenger beetle	*Hydrochara rickseckeri* (SC)
unsilvered fritillary butterfly	*Speyeria adiaste adiaste* (SC)

QUAD: 427D SAN JOSE EAST

Listed Species

Mammals	
riparian brush rabbit	Sylvilagus bachmani riparius (E) *
San Joaquin kit fox	*Vulpes macrotis mutica* (E)
Amphibians	
California red-legged frog	*Rana aurora draytonii* (T)

APPENDIX 1J-2. U.S. Fish and Wildlife Service Species List for Guadalupe River Project Area (continued)

Fish	
winter-run chinook salmon	*Oncorhynchus tshawytscha* (E)
delta smelt	*Hypomesus transpacificus* (T)
Central California steelhead	*Oncorhynchus mykiss* (T)
Central Valley spring-run chinook salmon	*Oncorhynchus tshawytscha* (T)
Sacramento splittail	*Pogonichthys macrolepidotus* (T)
Invertebrates	
bay checkerspot butterfly	*Euphydryas editha bayensis* (T)
Plants	
Santa Clara Valley dudleya	*Dudleya setchellii* (E)
Contra Costa goldfields	*Lasthenia conjugens* (E)
Metcalf Canyon jewelflower	*Streptanthus albidus* ssp. *albidus* (E)
Candidate Species	
Amphibians	
California tiger salamander	*Ambystoma californiense* (C)
Fish	
Central Valley fall/late fall-run chinook salmon	*Oncorhynchus tshawytscha* (C)
Species of Concern	
Mammals	
Pacific western big-eared bat	*Corynorhinus (=Plecotus) townsendii townsendii* (SC)
greater western mastiff-bat	*Eumops perotis califomicus* (SC)
small-footed myotis bat	*Myotis ciliolabrum* (SC)
long-eared myotis bat	*Myotis evotis* (SC)
fringed myotis bat	*Myotis thysanodes* (SC)
long-legged myotis bat	*Myotis volans* (SC)
Yuma myotis bat	*Myotis yumanensis* (SC)
San Francisco dusky-footed woodrat	*Neotoma fuscipes annectens* (SC)
Birds	
American peregrine falcon	*Falco peregrinus anatum* (D)
Bell's sage sparrow	*Amphispiza belli belli* (SC)
western burrowing owl	*Athene cunicularia hypugea* (SC)
ferruginous hawk	*Buteo regalis* (SC)
Reptiles	
silvery legless lizard	*Anniella pulchra pulchra* (SC)
northwestern pond turtle	*Clemmys marmorata marmorata* (SC)

APPENDIX 1J-2. U.S. Fish and Wildlife Service Species List for Guadalupe River Project Area (continued)

southwestern pond turtle	*Clemmys marmorata pallida* (SC)
California horned lizard	*Phrynosoma coronatum frontale* (SC)
Amphibians	
foothill yellow-legged frog	*Rana boylii* (SC)
western spadefoot toad	*Scaphiopus hammondii* (SC)
Fish	
longfin smelt	*Spirinchus thaleichthys* (SC)
Invertebrates	
Opler's longhorn moth	*Adela oplerella* (SC)
Ricksecker's water scavenger beetle	*Hydrochara rickseckeri* (SC)
Plants	
Mt. Hamilton thistle	*Cirsium fontinale* var. *campylon* (SC)
South Bay clarkia	*Clarkia concinna* ssp. *automixa* (SC)
fragrant fritillary	*Fritillaria liliacea* (SC)
pappose spikeweed	*Hemizonia parryi* ssp. *congdonii* (SC) *

KEY:

(E)	Endangered	Listed (in the Federal Register) as being in danger of extinction.
(T)	Threatened	Listed as likely to become endangered within the foreseeable future.
(P)	Proposed	Officially proposed (in the Federal Register) for listing as endangered or threatened.
(C)	Candidate	Candidate to become a proposed species.
(SC)	Species of Concern	May be endangered or threatened. Not enough biological information has been gathered to support listing at this time.
(D)	Delisted	Delisted. Status to be monitored for 5 years.
(*)	Extirpated	Possibly extirpated from this quad.
(**)	Extinct	Possibly extinct.
Critical Habitat		Area essential to the conservation of a species.

TABLE 1J-3. Special-Status Plant Species With Records of Occurrence in the Guadalupe River and Its Tributaries

Scientific Name/Common Name	Status Federal/State/CNPS[a]	Habitat	Distribution	Reason for Determination
Cirsium fontinale var. *campylon* Mt. Hamilton thistle	SC/ – / 1B	Chaparral, oak woodland, grassland on serpentine soils	Alameda, Santa Clara, and Stanislaus Counties	No suitable habitat in the project area or other mitigation sites
Clarkia cocinna ssp. *automixa* Santa Clara red ribbons	SC/ – / 1B	Woodland	Alameda and Santa Clara Counties	No suitable habitat in the project area or other mitigation sites
Dudleya setchellii Santa Clara Valley dudleya	E/ – / 1B	Grassland on serpentine soils	Santa Clara County	Extirpated from Santa Clara County
Lasthenia conjugens Contra Costa goldfields	E/ – / 1B	Vernal pools, moist sites in grasslands	Mendocino to Santa Barbara Counties	Extirpated from Santa Clara County and no suitable habitat in the project area
Plagiobothrys glaber Hairless popcorn-flower	B / – / 1A (Presumed extinct)	Alkaline meadows and coastal salt marsh	Marin to San Benito Counties	No suitable habitat in the project area or other mitigation sites
Streptanthus albidus ssp. *albidus* Metcalf Canyon jewelflower	E / – / 1B	Grassland on serpentine soils	Santa Clara Counties	No suitable habitat in the project area or other mitigation sites
Streptanthus albidus ssp. *peramoenus* Most beautiful jewelflower	SC / – / 1B	Chaparral and grassland on serpentine soils	Alameda, Contra Costa, and Santa Clara Counties	No suitable habitat in the project area or other mitigation sites
Chorizanthe robusta var. *robusta* Robust spineflower	E / – / 1B	Coastal bluff scrub, coastal dunes openings in cismontane woodland	Northeast central coast, southwest San Francisco Bay; Alameda*, Monterey, San Mateo*, Santa Clara*, and Santa Cruz Counties	Extirpated from Santa Clara County
Suaeda californica California seablite	E / – / 1B	Coastal salt marshes	Alameda*, Santa Clara*, Morro Bay, San Luis Obispo, historically found in south San Francisco Bay	No suitable habitat in the project area or other mitigation sites
Astragalus tener var. *tener* Alkali milk-vetch	– / – / 1B	Merced, Solano, and Yolo Counties; historically more widespread	Grassy flats and vernal pool margins, on alkali soils, below 200'	No suitable habitat in the project area or other mitigation sites
Cordylanthus maritimus ssp. *palustris* Point Reyes bird's-beak	SC / – / 1B	Coastal Northern California, Humboldt County to Santa Clara County	Coastal salt marsh	No suitable habitat in the project area or other mitigation sites

TABLE 1J-3. Special-Status Plant Species With Records of Occurrence in the Guadalupe River and Its Tributaries (continued)

Scientific Name/Common Name	Status Federal/State/CNPS[a]	Habitat	Distribution	Reason for Determination
Fritillaria liliacea Fragrant fritillary	SC / – / 1B	Coast Ranges from Marin County to San Benito County	Adobe soils of interior foothills, coastal prairie, coastal scrub, annual grassland, often on serpentinite, below 1,350'	No suitable habitat in the project area or other mitigation sites
Hemizonia parryi ssp. *congdonii* Congdon's tarplant	SC / – / 1B	Alameda, Contra Costa, Monterey, Santa Clara, Santa Cruz*, San Luis Obispo, and Solano* Counties	Valley and foothill grasslands on alkaline soil	No suitable habitat in the project area or other mitigation sites
Lessingia micradenia var. *glabrata* Smooth lessingia	SC / – / 1B	Santa Clara County	Chaparral on serpentinite, often along roadsides	No suitable habitat in the project area or other mitigation sites
Malacothamnus hallii Hall's bush mallow	– / – / 1B	Contra Costa, Merced, Santa Clara, and Stanislaus Counties	Chaparral, coastal scrub	No suitable habitat in the project area or other mitigation sites
Penstemon rattanii var. *kleei* Santa Cruz Mtns. Beardtongue	– / – / 1B	Santa Clara and Santa Cruz Counties, last seen 1962	Chaparral, lower montane coniferous forest, North Coast coniferous forest	No suitable habitat in the project area or other mitigation sites
ropidocarpum capparideum Caper-fruited tropidocarpum	SC / – / 1A	Alameda*, Contra Costa*, Glenn*, Monterey*, Santa Clara*, and San Joaquin* Counties	Grasslands in alkaline hills below 500'	No suitable habitat in the project area or other mitigation sites

[a] Status definitions:

Federal

E = listed as endangered under the Federal Endangered Species Act.

SC = species of concern; species for which existing information indicates it may warrant listing but for which substantial biological information to support a proposed rule is lacking.

– = no listing.

TABLE 1J-3. Special-Status Plant Species With Records of Occurrence in the Guadalupe River and Its Tributaries (continued)

Scientific Name/Common Name	Status Federal/State/CNPS[a]	Habitat	Distribution	Reason for Determination

State

E = listed as endangered under the California Endangered Species Act.

– = no listing.

California Native Plant Society

1A = List 1A species: presumed extinct in California.

1B = List 1B species: rare, threatened, or endangered in California and elsewhere.

– = no listing.

* = known populations believed extirpated from that county

TABLE 1J-4. Special-Status Wildlife Species Determined Not to Be Affected By Construction of the Guadalupe River Project
This table provides information on the status, distribution, habitats, and reasons for determining that construction of the Guadalupe River Project would not affect certain special-status species. Operational effects on certain special-status species are discussed in Chapter 6, "Cumulative Impacts and Other Required Analyses."

Common and Scientific Name	Status [a] Federal/State	California Distribution	Habitats	Reason for Determination of No Effect
Vernal pool fairy shrimp *Branchinecta lynchi*	T / –	Central Valley, central and south Coast Ranges from Tehama County to Santa Barbara County; isolated populations also in Riverside County	Common in vernal pools; also found in sandstone rock outcrop pools	No suitable habitat present in project area
Vernal pool tadpole shrimp *Lepidurus packardi*	E / –	Shasta County south to Merced County	Vernal pools and ephemeral stock ponds	No suitable habitat present in project area
Bay checkerspot butterfly *Euphydryas editha bayensis*	T / –	Vicinity of San Francisco Bay	Native grasslands on outcrops of serpentine soil; California plantain and owl's clover are host plants	No suitable habitat present in project area
California tiger salamander *Ambystoma californiense (=A. tigrinum c.)*	C / SSC	Central Valley, including Sierra Nevada foothills, up to approximately 1,000 feet, and coastal region from Butte County south to Santa Barbara County	Small ponds, lakes, or vernal pools in grasslands and oak woodlands for larvae; rodent burrows, rock crevices, or fallen logs for cover for adults and for summer dormancy	No suitable habitat present in project area
Foothill yellow-legged frog *Rana boylii*	SC / SSC	Occurs in the Klamath, Cascade, north Coast, south Coast, and Transverse Ranges; through the Sierra Nevada foothills up to approximately 6,000 feet (1,800 meters) south to Kern County	Creeks or rivers in woodlands or forests with rock and gravel substrate and low overhanging vegetation along the edge; usually found near riffles with rocks and sunny banks nearby	None observed during field surveys; not likely to occur in project area
San Francisco garter snake *Thamnophis sirtalis tetrataenia*	E / E	Northern San Mateo County southward along the coast and the eastern slope of the Santa Cruz Mountains to the Santa Clara County line	Favors ponds, lakes, and marshy areas containing abundant vegetation, which it uses for cover	Project is outside known range of species
Giant garter snake *Thamnophis gigas*	T / T	Central Valley from Fresno north to the Gridley/Sutter Buttes area; has been extirpated from areas south of Fresno	Sloughs, canals, and other small waterways where there is a prey base of small fish and amphibians; requires grassy banks and emergent vegetation for basking and areas of high ground protected from flooding during winter	Project is outside of known range of species, which occurs in Central Valley

TABLE 1J-4. Special-Status Wildlife Species Determined Not to Be Affected By Construction of the Guadalupe River Project (continued)

Common and Scientific Name	Status [a] Federal/State	California Distribution	Habitats	Reason for Determination of No Effect
California brown pelican (nesting colony) *Pelecanus occidentalis californicus*	E / E	Present along the entire coastline, but does not breed north of Monterey County; extremely rare inland	Typically in littoral ocean zones, just outside the surf line; nests on offshore islands	Species may occur in project area (in bay); however, no habitat would be affected by project and no known nesting areas exist in project area
Bald eagle *Haliaeetus leucocephalus*	T / E	Nests in Siskiyou, Modoc, Trinity, Shasta, Lassen, Plumas, Butte, Tehama, Lake, and Mendocino Counties and in the Lake Tahoe Basin; reintroduced into central coast; winter range includes the rest of California, except the southeastern deserts, very high altitudes in the Sierras, and east of the Sierra Nevada south of Mono County; range expanding	In western North America, nests and roosts in coniferous forests within 1 mile of a lake, a reservoir, a stream, or the ocean	Species may occasionally occur in project area, however, no known nesting areas exist in project area and no known wintering sites exist in project area
Northern harrier *Circus cyaneus*	–/ SSC	Throughout lowland California; has been recorded in fall at high elevations	Grasslands, meadows, marshes, and seasonal and agricultural wetlands providing tall cover	No suitable nesting habitat in the project area
Black rail *Laterallus jamaicensis*	SC / T	Permanent resident in the San Francisco Bay and eastward through the Delta into Sacramento and San Joaquin Counties; small populations in Marin, Santa Cruz, San Luis Obispo, Orange, Riverside, and Imperial Counties	Tidal salt marshes associated with heavy growth of pickleweed; also occurs in brackish marshes or freshwater marshes at low elevations	No suitable habitat present in project area
California clapper rail *Rallus longirostris obsoletus*	E / E	Marshes around the San Francisco Bay and east to Suisun Marsh	Restricted to salt marshes and tidal sloughs; usually associated with heavy growth of pickleweed; feeds on mollusks removed from the mud in sloughs	Species occurs in the lower Guadalupe River/Alviso Slough area; no suitable habitat occurrences in the project area
Western snowy plover *Charadrius alexandrinus nivosus*	T / SSC (Coastal)-- / SSC (Inland)	Winters along the coast from Del Norte County to San Diego County: breeding sites within this range are very limited; nests at inland lakes throughout northeastern, central, and southern California	Coastal beaches above the normal high tide limit with wood or other debris for cover; inland shores of salt ponds and alkali or brackish inland lakes	Species occurs at salt ponds downstream from Alviso; no suitable habitat occurrence in project area
Mountain plover *Charadrius montanus*	C / SSC	Does not breed in California; in winter, found in the Central Valley south of Yuba County, along the coast in parts of San Luis Obispo, Santa Barbara, Ventura, and San Diego Counties; parts of Imperial, Riverside, Kern, and Los Angeles Counties	Occupies open plains or rolling hills with short grasses or very sparse vegetation; nearby bodies of water are not needed; may use newly plowed or sprouting grainfields	No suitable habitat present in project area

TABLE 1J-4. Special-Status Wildlife Species Determined Not to Be Affected By Construction of the Guadalupe River Project (continued)

Common and Scientific Name	Status [a] Federal/State	California Distribution	Habitats	Reason for Determination of No Effect
California least tern *Sterna antillarum (=albifrons) browni*	E / E	Nests on beaches along the San Francisco Bay and along the southern California coast from southern San Luis Obispo County south to San Diego County	Nests on sandy, upper ocean beaches, and occasionally uses mudflats; forages on adjacent surf line, estuaries, or the open ocean	Species may occur in the South Bay, however, no habitat would be affected by project and no suitable nesting habitat in the project area
Marbled murrelet *Brachyramphus marmoratus*	T / E	Nesting sites from the Oregon border to Eureka and between Santa Cruz and Half Moon Bay; winters in nearshore and offshore waters along the entire California coastline	Mature, coastal coniferous forests for nesting; nearby coastal water for foraging; nests in conifer stands greater than 150 years old and may be found up to 35 miles inland; winters on subtidal and pelagic waters often well offshore	No suitable habitat present in project area
Saltmarsh common yellowthroat *Geothlypis trichas sinuosa*	SC / SSC	Found only in the San Francisco Bay Area in Marin, Napa, Sonoma, Solano, San Francisco, San Mateo, Santa Clara, and Alameda Counties	Freshwater marshes in summer and salt or brackish marshes in fall and winter; requires tall grasses, tules, and willow thickets for nesting and cover	No suitable habitat present in project area
Tricolored blackbird *Agelaius tricolor*	SC / SSC	Largely endemic to California; permanent residents in the Central Valley from Butte County to Kern County; at scattered coastal locations from Marin County south to San Diego County; breeds at scattered locations in Lake, Sonoma, and Solano Counties; rare nester in Siskiyou, Modoc, and Lassen Counties	Nests in dense colonies in emergent marsh vegetation, such as tules and cattails, or upland sites with blackberries, nettles, thistles, and grainfields; nesting habitat must be large enough to support 50 pairs; probably requires water at or near the nesting colony; requires large foraging areas, including marshes, pastures, agricultural wetlands, dairies, and feedlots, where insect prey is abundant	No suitable habitat present in project area
Salt marsh vagrant (wandering) shrew *Sorex vagrans halicoetes*	SC / SSC	Restricted to southern and northwestern San Francisco Bay	Midelevation salt marsh habitats with dense growths of pickleweed; requires driftwood and other objects for nesting cover	No suitable habitat present in project area
Riparian brush rabbit *Sylvilagus bachmani riparius*	C / SSC	Limited to San Joaquin County at Caswell State Park near the confluence of the Stanislaus and San Joaquin Rivers	Dense thickets of brush associated with riparian or chaparral habitats	Project area is outside species' known range; no suitable habitat in the project area

TABLE 1J-4. Special-Status Wildlife Species Determined Not to Be Affected By Construction of the Guadalupe River Project (continued)

Common and Scientific Name	Status [a] Federal/State	California Distribution	Habitats	Reason for Determination of No Effect
Salt marsh harvest mouse *Reithrodontomys raviventris*	E / E	San Francisco, San Pablo, and Suisun Bays	Salt marshes with a dense plant cover of pickleweed and fat hen; adjacent to an upland site	Species occurs in the lower Guadalupe River/Alviso Slough area; no occurrences in the project area; no suitable habitat
San Joaquin kit fox *Vulpes macrotis mutica*	E / T	Principally occurs in the San Joaquin Valley and adjacent open foothills to the west; recent records from 17 counties extending from Kern County north to Contra Costa County	Saltbush scrub, grassland, oak, savanna, and freshwater scrub	No suitable habitat present in project area

[a] Status definitions:

Federal

E = listed as endangered under the Federal Endangered Species Act.

T = listed as threatened under the Federal Endangered Species Act.

C = species for which USFWS has on file sufficient information on biological vulnerability and threat(s) to support issuance of a proposed rule to list, but issuance of the proposed rule is precluded.

SC = species of concern; species for which existing information indicates it may warrant listing but for which substantial biological information to support a proposed rule is lacking.

– = no listing.

State

E = listed as endangered under the California Endangered Species Act.

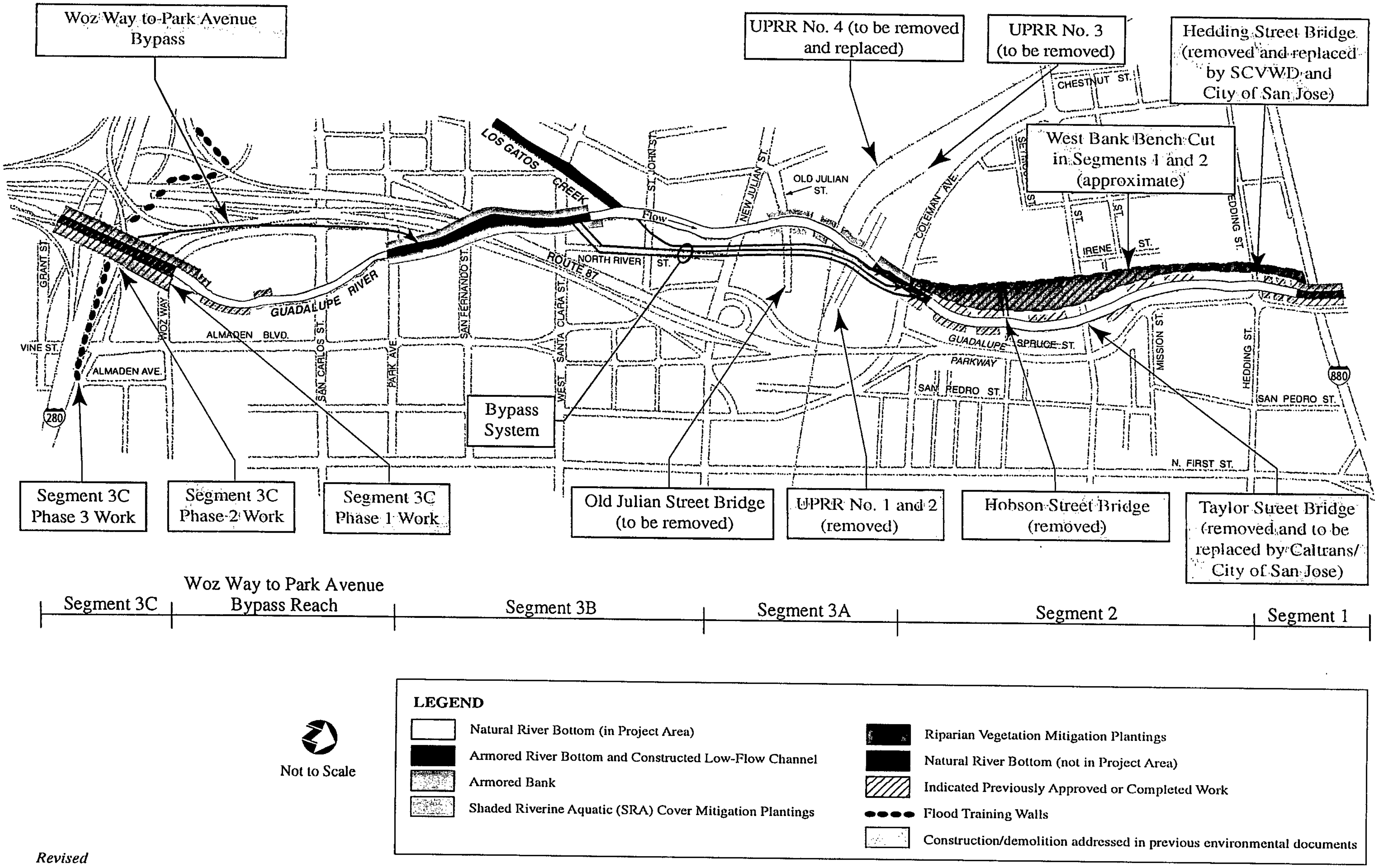
T = listed as threatened under the California Endangered Species Act.

SSC = species of special concern in California.

– = no listing.

APPENDIX 1K

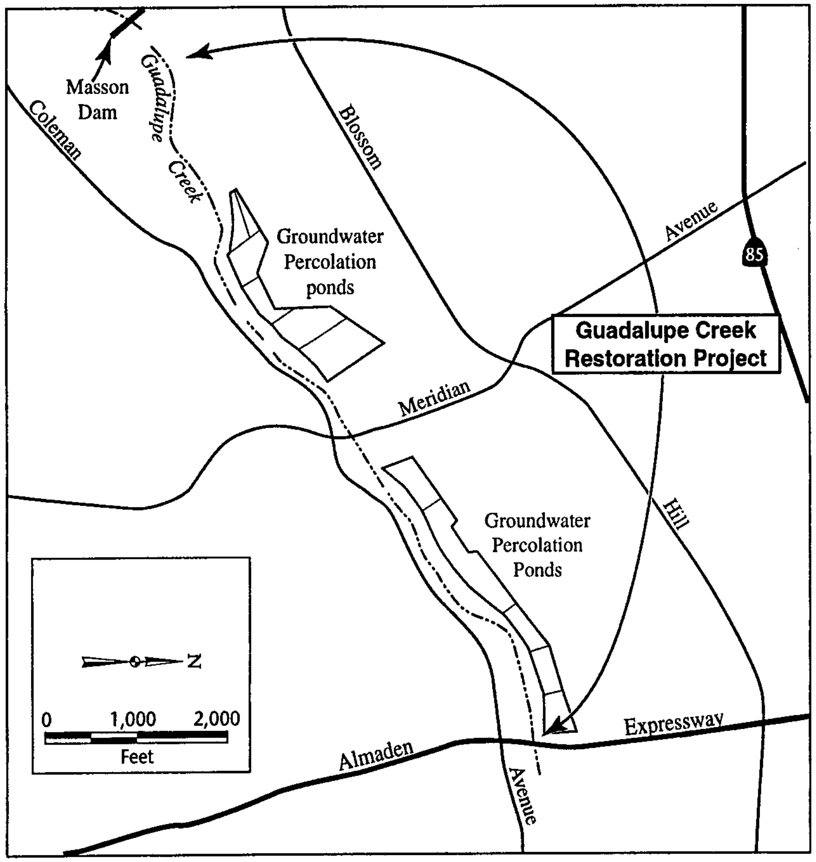
Species Observed or Expected to Occur in the Guadalupe River Project Area (Segments 1, 2, and 3), Reach A Mitigation Site, and Guadalupe Creek Mitigation Site



Revised

Figure 1K-1. Guadalupe River Project with Refined Bypass System Alternative (Proposed Action)
Flood Protection and Onsite Mitigation Components

Guadalupe Creek Mitigation Site*



*This figure depicts the entire Guadalupe Creek Restoration Project area. A portion of this area will be used to mitigate for the Guadalupe River Project with Proposed Action.

Reach A Mitigation Site

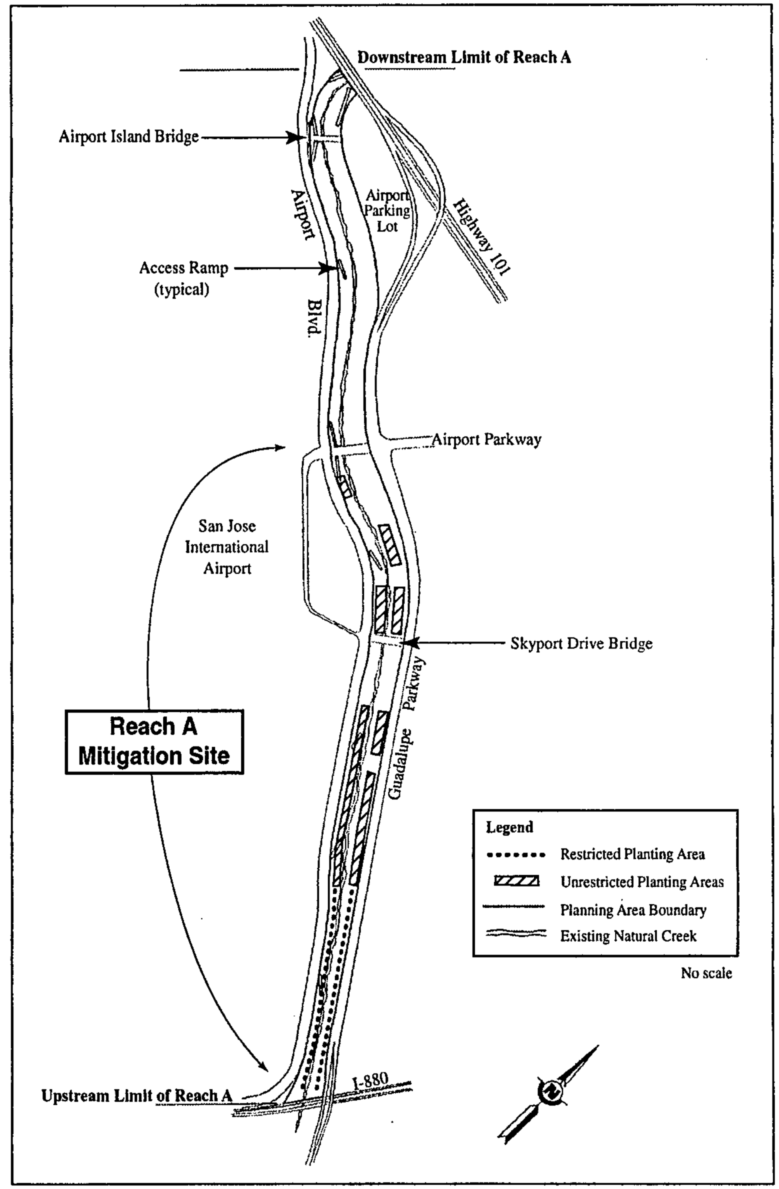
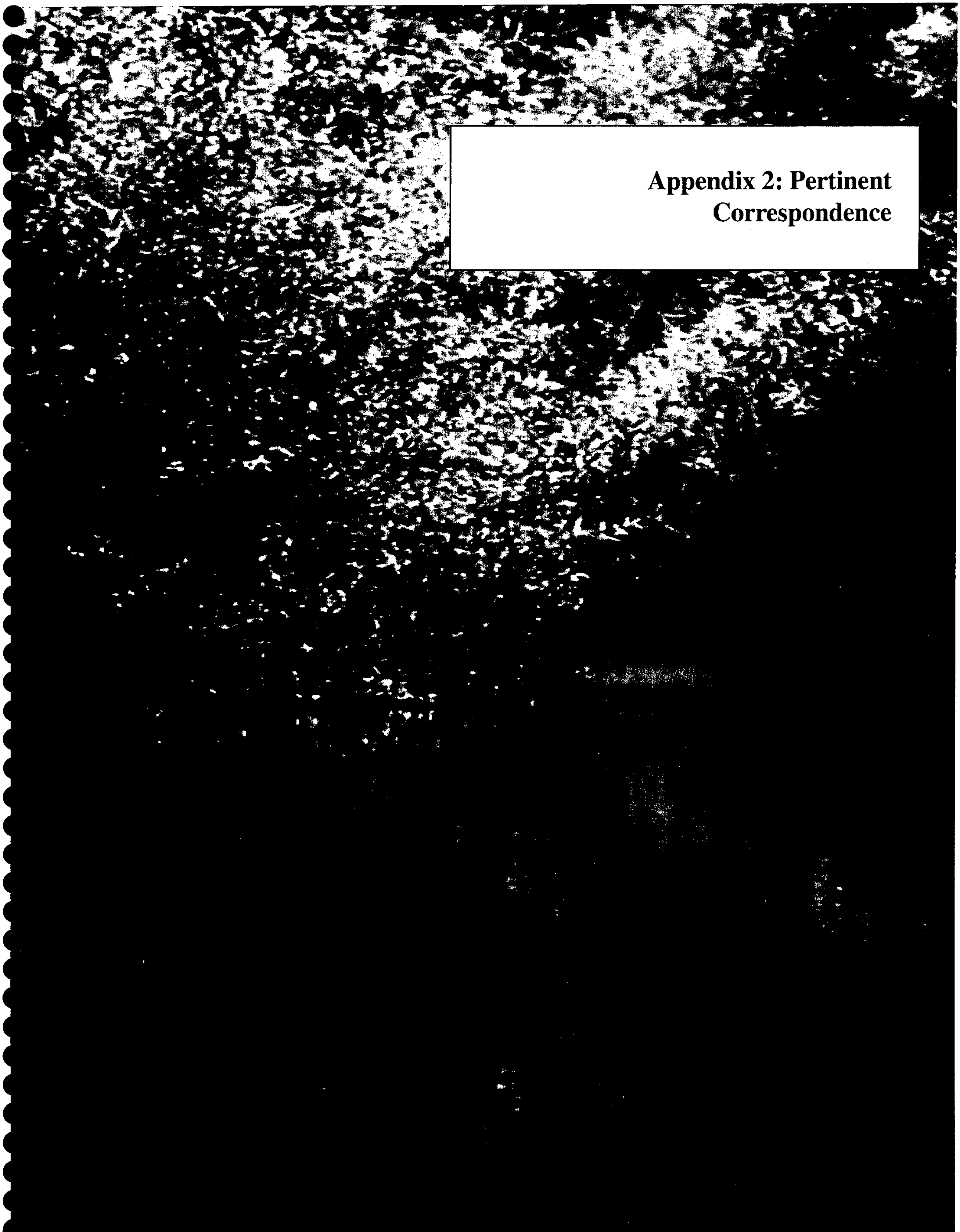


Figure 1K-2. Offsite Mitigation Areas



Appendix 2: Pertinent Correspondence

Contents – Appendix 2

Santa Clara Valley
Water District

5750 ALMADEN EXPWY
SAN JOSE, CA 95118-3686
TELEPHONE (408) 265-2600
FACSIMILE (408) 266-0271
www.scvwd.dst.ca.us
AN EQUAL OPPORTUNITY EMPLOYER

June 1, 2000

Via Facsimile (916) 557-7848
Original to follow Federal Express

Colonel Michael J. Walsh
District Engineer
Sacramento District
U.S. Army Corps of Engineers
1325 J Street
Sacramento, CA 95814-2922

Dear Colonel Walsh:

Subject: Guadalupe River Project, Downtown San Jose (3015)—Assertion of Financial Intent to Participate in Modified Project

This letter asserts the Santa Clara Valley Water District (District) intent to participate in the U.S. Army Corps of Engineer's modifications to the federally authorized Guadalupe River Flood Control Project (Project) in downtown San Jose, California, as the non-Federal sponsor.

The Project is authorized by Section 401(b) of the Water Resources Development Act of 1986, Public Law 99-662. The District will continue to participate in the cost-sharing and financing of the Project in accordance with the terms of the Local Cooperation Agreements (No. A1380 and No. A1381) dated March 30, 1992.

The District has established a mission statement and statement of responsibility that include providing flood protection for the community of San Jose. Consistent with protecting the environmental quality of the Guadalupe River, the District supports the primary purpose of the proposed modifications to provide improved flood protection for downtown San Jose.

The District understands that the estimated total cost of the recommended plan, as reflected in the Draft General Reevaluation Report/Supplemental Environmental Impact Statement/Environmental Impact Report, is approximately $205.5 million. The estimated remaining project cost is approximately $114.4 million. The estimated annual cost of the operation and maintenance is approximately $2.5 million. In addition, the District acknowledges that it will have responsibility for all project lands, easements, rights of way, relocations, and dredged material deposit sites, excluding relocation of railroad bridges and approaches thereto.

The District proposes to budget its share of the remaining project cost from Capital Reserves to meet the remaining local share of the Project costs. The District continues to be in a strong financial position to meet the local cost obligations for the Project. Annual revenue sources for 1999-2000 are $4.6 million *ad valorem* property tax, $7.6 million benefit assessments, and $3.2 million interest income. In addition, on May 26, 2000, the District received State Subventions Program reimbursements of $10.7 million of which $5.5 million are reimbursements for the Project. The District also issued Certificates of Participation in March 2000 with net proceeds of $10 million for work on the Guadalupe River. We are pleased to receive very high bond ratings for this issuance—a Standard and Poors bond rating of AA+ and a Moody's rating of Aa2.

In conclusion, the District is financially sound to meet the local Project costs and committed to the timely completion of this important project.

Sincerely,

Stanley M. Williams

Stanley M. Williams
CEO/General Manager

recycled paper

Santa Clara Valley
Water District

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June 1, 2000

Via Facsimile (916) 557-7848
Original to follow Federal Express

Colonel Michael J. Walsh
District Engineer
Sacramento District
U.S. Army Corps of Engineers
1325 J Street
Sacramento, CA 95814-2922

Dear Colonel Walsh:

Subject: Guadalupe River Project, Downtown San Jose (3015)—Local Sponsor Support

This letter asserts the Santa Clara Valley Water District (District) intent to participate in the U.S. Army Corps of Engineer's modifications to the federally authorized Guadalupe River Flood Control Project (Project) in downtown San Jose, California, as the non-Federal sponsor.

The Project is authorized by Section 401(b) of the Water Resources Development Act of 1986, Public Law 99-662. The District will continue to participate in the cost-sharing and financing of the Project in accordance with the terms of the Local Cooperation Agreements (No. A1380 and No. A1381) dated March 30, 1992.

The District has established a mission statement and statement of responsibility that include providing flood protection for the community of San Jose. Consistent with protecting the environmental quality of the Guadalupe River, the District supports the proposed modifications to provide improved flood protection for downtown San Jose.

In conclusion, the District is committed to the timely completion of this important project.

Sincerely,

Stanley M. Williams

Stanley M. Williams
CEO/General Manager

DISPUTE RESOLUTION MEMORANDUM REGARDING CONSTRUCTION, OPERATION, AND MAINTENANCE OF THE GUADALUPE RIVER FLOOD CONTROL PROJECT

In order to resolve threatened litigation and other concerns, the Signatories support the construction, operation, and maintenance of the Guadalupe River Flood Control Project on the following conditions.

I. Recitals

1. This Dispute Resolution Memorandum concerns the Guadalupe River Flood Control Project (Project) authorized by P.L. 99-662 (1986) and P.L. 101-101 (1989), as further described in U.S. Army Corps of Engineers, Guadalupe River, CA, General Design Memorandum (December 1991), Environmental Impact Statement (July 1985), and Environmental Assessment (September 1990 and January 1991) (hereafter, Project Documents).

2. The Santa Clara Valley Water District (SCVWD), U. S. Army Corps of Engineers (Corps), City of San Jose, and City of San Jose Redevelopment Agency have substantially completed Contracts 1 and 2, between Interstate 880 and Coleman Avenue in downtown San Jose. Construction of Contracts 3A, 3B and 3C has not yet been accomplished. These agencies elected to enter into an alternative dispute resolution (ADR) process with the Guadalupe-Coyote Resource Conservation District (GCRCD), Trout Unlimited (TU), and Pacific Coast Federation of Fishermen's Associations (PCFFA), to resolve issues raised in a Notice of Intent to Sue issued by GCRCD, TU, and PCFFA dated May 22, 1996 and amended November 27, 1996, under the citizen suit provision of the Clean Water Act (33 U.S.C. §1365). The Notice of Intent primarily raised concerns about the adequacy of the environmental mitigation plan for the Guadalupe River Flood Control Project between Interstate 880 and Interstate 280. The U.S. Fish & Wildlife Service (USFWS), State Water Resources Control Board (SWRCB), San Francisco Bay Regional Water Quality Control Board (SFBRWQCB), National Marine Fisheries Service (NMFS), and the California Department of Fish and Game (DFG) participated in the ADR process providing substantive input in their capacity either as experts on species and habitats affected by the project or as permitting agencies.

3. Through this Dispute Resolution Memorandum and subject to legal understandings set forth in Section VII, the Signatories intend to avoid litigation that would delay project completion and intend that the project will provide the authorized level of flood protection; will provide other community and environmental benefits consistent with the public interest in

the Guadalupe River; will comply with all applicable laws; will be cost-effective; will be fundable through secure sources; will be timely completed; and will allow for the restoration of the Guadalupe River and its tributaries. The Signatories do not intend for this Dispute Resolution Memorandum to increase, diminish, or otherwise modify the rights, duties, or authority of any public agency.

II. Proposed Project

1. Signatories state that for the purpose of starting further review as described in Section VI, the proposed project will be described as follows:

A. Construction of Contracts 1 and 2 has been accomplished generally in conformity with Project Documents, except that plantings to mitigate adverse impacts on Shaded Riverine Aquatic Habitat (SRA) will be undertaken as described in Sections III and IV below.

B. The design for Contract 3C, between Interstate 280 and Woz Way, will be as stated in Project Documents, except that removal or degradation of existing SRA will be avoided to the maximum extent feasible.

C. The design for Contracts 3A and 3B will avoid adverse impact on anadromous fisheries to the maximum extent feasible. The design will provide for a covered underground bypass facility. This facility will be presented as one of the alternatives analyzed in the planning and environmental documents necessary for completion of Contracts 3A and 3B.

(1) Subject to modification in the course of the further procedures described below, the design for the bypass facility will be two box culverts approximately 17-feet high by 25-feet wide east of the east bank of the river.

(2) The banks and channel between the inlet and outlet structures of this bypass facility will be maintained in a natural state to the maximum extent feasible. Inlet and outlet structures will be located and designed so as to avoid impacts on existing SRA to the maximum extent feasible.

III. Early Implementation

1. The Signatories state that, to the maximum extent feasible, the Corps, in cooperation with SCVWD, will mitigate existing SRA and other riparian impacts caused by Contracts 1 and 2 prior to final approval of the proposed project for Contract 3.

A. The Corps, in cooperation with SCVWD, will expeditiously complete any necessary planning and other work preparatory to actual construction of the mitigation measures.

B. To the maximum extent feasible, the Corps, in cooperation with SCVWD, will construct appropriate mitigation measures, including SRA plantings, in 1998; and will complete implementation of such mitigation measures in 1999.

2. Construction associated with Contract 3C, in whole or part, may proceed in advance of the proposed project for Contracts 3A and 3B, provided:

A. A mitigation plan substantially in conformity with Section IV is developed by April 15, 1999.

B. The Corps, in cooperation with SCVWD, has constructed mitigation measures as provided in paragraph III.1.

C. Impacts of construction of Contract 3C will be mitigated before or concurrent with such construction as allowed in Sec. 906 (a) (1) of Water Resources Development Act of 1986, P.L. 99-662 (1986).

D. The Corps, in cooperation with SCVWD, has obtained final approval for Contract 3C.

3. SCVWD may undertake mitigation in addition to that provided above, prior to final approval of the proposed project for Contract 3. Upon such final approval, the Signatories will review completed mitigation measures to compare their actual benefits with the mitigation requirements under the final mitigation plan.

4. In consultation with the other Signatories, SCVWD will develop and implement an accounting system for mitigation measures undertaken by SCVWD in this and future projects and activities which affect the ecological quality of the Guadalupe River and its tributaries. The system will track the benefits of such mitigation measures and will provide that benefits in excess of the requirements for this project can be credited by appropriate agencies for use by SCVWD on other projects and activities.

IV. Environmental Mitigation Plan

1. The Corps, in cooperation with SCVWD, will develop a plan for mitigation of adverse impacts of the proposed project on riparian vegetation, anadromous fisheries, and other beneficial uses in the Guadalupe River.

2. The plan will be designed and implemented to fully mitigate project-related impacts to beneficial uses as required for water quality certification and will comply with all other applicable laws requiring mitigation of environmental impacts. In satisfaction of this purpose, the plan will:

A. include any hydraulic or geomorphic analysis necessary to assure the viability of the plan. The Signatories anticipate that the ongoing study by Northwest Hydraulics, Inc., under contract with the Corps, will be adequate for this purpose and may be modified as appropriate in the course of the further review described in Section VI.

B. provide for replacement of existing riparian vegetation, including SRA, removed for project construction or operation. The replacement vegetation will have at least equal value for protection of the anadromous fisheries. Functional equivalency of value will be confirmed by application of the Habitat Evaluation Procedure (HEP).

C. provide for other measures necessary to assure that the project will not cause elevated water temperature or other project impacts in the project reach to harm anadromous fisheries and other beneficial uses, during project construction and over the entire project life including the transition period before replacement vegetation matures. The plan may include flow augmentation to reduce water temperature in the project area.

D. provide for adaptive management of the project by SCVWD to help ensure success of the mitigation measures and to provide for corrective action in the event of mitigation failure. The Signatories intend that the completed project, in combination with other efforts beyond the project scope, will allow for restoration of self-sustaining fisheries in good condition throughout the Guadalupe River and its tributaries.

E. account for mitigation measures undertaken for this project. The Signatories agree to compare actual benefits of completed early implementation measures against mitigation requirements of the final mitigation plan, and to credit any excess as provided in paragraph III.4.

V. Adaptive Management

1. SCVWD will operate, maintain, and otherwise manage the project in an adaptive manner. SCVWD, in consultation with the other Signatories, will develop an adaptive management program that will be included in the project, subject to the final approval as described in Section VI. The program will include the following elements:

A. measurable objectives for each project benefit. As to anadromous fisheries, the Signatories acknowledge that the measurable objectives will

relate to those habitat qualities impacted by this project and will not hold the project responsible for other environmental conditions which may limit the population or distribution of these fisheries.

B. operation and maintenance procedures intended to contribute to the achievement of such objectives.

C. systematic monitoring of actual conditions, and evaluation of whether the measurable objectives are being achieved. At least annually, SCVWD will report the monitoring results in an appropriate form to the other Signatories.

D. modification of project design, mitigation, operation or maintenance procedures, as appropriate, to remedy any shortfall in a project benefit.

E. appropriate mechanisms for the Signatories to participate in the implementation of the adaptive management program. Following project construction, the Signatories will meet at least annually for the purpose of exchanging information on the adaptive management program.

F. appropriate assurances for implementation of the program.

VI. Further Procedures

1. The Signatories will encourage their respective organizations to implement this Dispute Resolution Memorandum. By September 15, 1998, Signatories will confirm in appropriate written form their organizations' intent to implement this Dispute Resolution Memorandum. For the purpose of this Memorandum, the organizations who support such implementation will be Signatories following ratification.

2. Provided that all of the organizations represented by Signatories express their intent to implement this Dispute Resolution Memorandum, the Corps and SCVWD will prepare the planning and environmental documents necessary for completion of the proposed project, including the mitigation plan and adaptive management program; and will seek final approval of the preferred alternative chosen in the National Environmental Policy Act and California Environmental Quality Act process.

A. In such further review, the alternative described in Section II will be the proposed project.

B. The environmental documents will include an analysis of cumulative impacts of this and related projects, on the basis of information developed after publication of Project Documents.

C. For the purpose of this Dispute Resolution Memorandum, final approval means the receipt by the Corps and SCVWD of those permits, certifications, or other approvals or modifications of existing approvals, that they are required to obtain under applicable laws prior to construction.

3. To the maximum extent feasible, the Corps, in cooperation with SCVWD, will develop the mitigation plan described in Section IV by April 15, 1999. After that date, they may modify the mitigation plan as necessary to obtain final approval.

4. To the maximum extent allowed by law, the Corps and SCVWD will encourage the other Signatories to participate in the preparation of the planning and environmental documents described in paragraph VI.2. The Corps and SCVWD acknowledge that:

A. This Dispute Resolution Memorandum states general principles which will be expressed in more specific terms in the mitigation plan, adaptive management program, and other documents described in paragraph VI.2.

B. The participation of the other Signatories in the preparation of these documents will help further the purpose of this Dispute Resolution Memorandum.

5. To the maximum extent allowed by law, the Signatories will:

A. support applications necessary for project construction, operation, and maintenance in substantial conformity with this Dispute Resolution Memorandum;

B. support designation of cold water fisheries as a beneficial use of the Guadalupe River and any other conforming amendments to the SFBRWQCB Basin Plan; and

C. publicly express their support for final approval and necessary funding.

6. Provided the Corps and SCVWD obtain final approval of the construction, operation, and maintenance in substantial conformity with this Dispute Resolution Memorandum:

A. The Signatories will support such construction, operation, and maintenance.

B. GCRCD, TU, and PCFFA will withdraw their notice of Clean Water Act citizens' suit, dated May 22, 1996 and amended November 27, 1996; and

will not support or bring other litigation to challenge project completion, operation, and maintenance in substantial conformity with this Dispute Resolution Memorandum.

7. The Signatories will make best efforts to resolve any concerns that arise regarding implementation of this Dispute Resolution Memorandum.

A. Not later than September 15, 1998, the Signatories will meet and confer to obtain the advice of individual signatories regarding the status of the Project.

B. From September 16, 1998 through final completion of construction, the Signatories will meet and confer as needed in order to obtain individual advice regarding the Project and otherwise to assure continuing cooperation resulting in final resolution of the threatened litigation and other disputes described in Section I, paragraph 2. In preparation for such meeting(s), the Corps, SCVWD, and other Signatories as appropriate will prepare written status reports.

C. Following project construction, the Signatories will meet in accordance with the terms of the adaptive management program.

8. This Dispute Resolution Memorandum may be modified by mutual written consent.

9. The Signatories recognize that time is of the essence in implementation of this Dispute Resolution Memorandum.

VII. Rights, Duties and Authorities

1. This Dispute Resolution Memorandum establishes procedures intended to result in final resolution of the threatened litigation and other disputes described in Section I, paragraph 2. It does not increase, diminish, or otherwise modify the rights, duties, or authority of any Signatory. All of the understandings of this Dispute Resolution Memorandum are subject to existing law, policy, authority, and availability of funds.

2. This Dispute Resolution Memorandum does not modify the allocation of responsibilities among SCVWD, Corps, City of San Jose, and City of San Jose Redevelopment Agency for project construction, operation, or maintenance, including funding thereof.

Michael Aceituno
Chief, Div. of Habitat Conservation
U.S. Fish and Wildlife Service
Sacramento

Oscar Balaguer
Environmental Specialist
State Water Resources Control Board,
Division of Water Quality

James R. Bybee
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Northern California
National Marine Fisheries Service

Darrell Dearborn
Senior Deputy City Manager
City of San Jose

Mike Nolan
Chief of Civil Branch of PPMD
U.S. Army Corps of Engineers,
Sacramento District

Ralph Qualls
Director
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Richard Roos-Collins
Natural Heritage Institute
Attorney for Guadalupe-Coyote Resource
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City of San Jose Redevelopment Agency

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Quality Control Board

Carl Wilcox
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Mark Wolfe
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Attorney for Guadalupe-Coyote
Resource Conservation District,
Pacific Coast Federation of Fishermen's
Associations, and Trout Unlimited

James Ferguson
Project Manager
Santa Clara Valley Water District

SUPPLEMENT TO DISPUTE RESOLUTION MEMORANDUM REGARDING CONSTRUCTION, OPERATION, AND MAINTENANCE OF THE GUADALUPE FLOOD CONTROL PROJECT

The Signatories to the Dispute Resolution Memorandum hereby state their support for the U.S. Army Corps of Engineers (Corps), Santa Clara Valley Water District (SCVWD), City of San Jose, and City of San Jose Redevelopment Agency, to proceed with completion of Contract 3C of the Guadalupe River Flood Control Project.

1. The Dispute Resolution Memorandum dated Sept. 9, 1998 (DRM) provides that construction of Contract 3C could proceed in advance of the final approval of the proposed project for Contract 3, on satisfaction of the conditions stated in Section III thereof.

2. The Signatories hereby confirm satisfaction of those conditions.

A. Consistent with Dispute Resolution Memorandum, paragraph III.2.A, a mitigation and monitoring plan substantially in conformity with Dispute Resolution Memorandum Section IV was developed by April 15, 1999. The draft mitigation and monitoring plan is attached. The Signatories affirm that the draft will be modified as provided therein, including incorporating the findings of a completed hydraulic and geomorphic analysis.

B. Consistent with Dispute Resolution Memorandum, paragraph III.2.B, the Corps and the SCVWD, to the maximum extent feasible, have constructed measures to mitigate existing Shaded Riverine Aquatic cover (SRA) and other riparian impacts caused by Contracts 1 and 2. The attached table documents the status and schedule for the on-going construction of those mitigation measures.

C. Consistent with Dispute Resolution Memorandum, paragraph III.2.C, the Corps and the SCVWD, have undertaken measures to mitigate the potential impacts of Contract 3C. They will complete additional measures, as indicated in the attached table, concurrent with or prior to construction of Contract 3C. The Signatories confirm that these completed and additional measures will be adequate to mitigate the impacts of Contract 3C.

3. The Corps, in cooperation with the SCVWD, will obtain final regulatory approval for Contract 3C prior to beginning construction of Contract 3C, consistent with Dispute Resolution Memorandum, paragraph III.2.D.

4. The Signatories support the construction of Contract 3C in light of the satisfaction of these conditions, and on the understanding that Contract 3 will proceed in all other respects as provided in the Dispute Resolution Memorandum.

5. The undersigned representatives of the Signatories will encourage their respective organizations to ratify this Supplement to the Dispute Resolution Memorandum. The undersigned will confirm such ratification in appropriate written form by June 15, 1999.

6. Ratification

Mark Charlton
Deputy for Programs and Project Mgt.
U.S. Army Corps of Engineers,
Sacramento District

Darrell Dearborn
Senior Deputy City Manager
City of San Jose

James Ferguson
Executive Manager
Santa Clara Valley Water District

Mark Helvey
Resource Management Specialist,
Northern California
National Marine Fisheries Service

Mark Littlefield
Branch Chief,
Wetlands & Coastal Resources
U.S. Fish and Wildlife Service,
Sacramento Office

Mike Nolan
Chief, Civil Works Branch, PPMD
U.S. Army Corps of Engineers,
Sacramento District

Ralph Qualls
Director,
Department of Public Works
City of San Jose

Richard Roos-Collins
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and Trout Unlimited

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Kay Whitlock
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Richard Whitsel
Chief, Wetlands Office
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Quality Control Board

Carl Wilcox
Environmental Services Supervisor,
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California Department of Fish and Game

Stan Williams
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Mark Wolfe
Natural Heritage Institute
Attorney for Guadalupe-Coyote
Resource Conservation District,
Pacific Coast Federation of Fishermen's
Associations, and Trout Unlimited

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825

IN REPLY REFER TO:
HC-COE

February 23, 2000

District Engineer
Corps of Engineers, Sacramento District
1325 J Street
Sacramento, California 95814-2922

Subject: Summary of Fish and Wildlife Service/Corps of Engineers Coordination on the Guadalupe River Flood Control Project, Lower Reaches (Downtown Project)

Dear Colonel Walsh:

Since our original Fish and Wildlife Coordination Act report was issued in 1984, the Guadalupe River Flood Control Project, Lower Reaches (Downtown Project) has been substantially amended and revised several times. Ultimately, this has lead to a re-evaluation of the project design, impacts, and mitigation, involving a number of activities by the Fish and Wildlife Service (Service), or by consultants under our mutual guidance. Pursuant to our current scope of work, we are submitting this report to document the coordination history of the Service with the Corps of Engineers (Corps) that have led us to an agreement on the principal elements of a mitigation plan, and the anticipated events which shall constitute fulfillment of that agreement.

Our 1984 report, which is included in the Corps' 1985 Final Interim Feasibility Report and Environmental Impact Statement, Guadalupe River and Adjacent Streams Investigation, not only evaluated a very different project design from today, but did so under the erroneous assumption that the project area supported only warmwater, nongame fishes. The basic project design in 1985 was widening on one side from Interstate 880 (then Highway 17) to the Southern Pacific Railroad crossing, an underground bypass from the railroad tracks to West Julian Street, concrete lining from Santa Clara to San Fernando Streets, and a privately-funded underground bypass from Park Avenue to I-280. The river channel in this latter bypass ("Park-Woz bypass") was to remain in a natural state. A Habitat Evaluation Procedures (HEP) analysis was done based on a number of terrestrial and semi-aquatic wildlife guild indices, resulting in a recommendation of 26.9 acres of riparian mitigation for 14 acres of habitat loss. Those mitigation lands were 12.6 acres on low benches within the floodway between Coleman Avenue and I-880, and 14.3 acres top-of-bank between Taylor Street and Brokaw Road.

Several significant changes are reflected in the Corps' 1991 General Design Memorandum (GDM). First, the top-of-bank mitigation areas were no longer available due to conflict with unrelated freeway and airport upgrades. Second, additional riparian impacts were identified in the Park-Woz bypass area: 0.5 acres at the bypass inlet, and 0.8 acres of hardscape for aesthetic purposes as part of the Guadalupe River Park project. As a result of the first change, the Corps proposed to widen the berm area between Coleman Avenue and I-880, and to excavate a secondary channel intended to enhance riparian quality. Considering the second change, we recommended the riparian area be increased by 1.15 acres, but advised that any further changes

in the project be accompanied by a re-analysis of the riparian HEP. The net result was an increase in impact to 14.5 acres riparian, and reduction in mitigation to 20.05 acres. Our coordination to this point is adequately summarized in the 1991 GDM and a 1991 Environmental Assessment (EA).

Unlike previous documents, the 1991 EA acknowledged salmonid runs in the Guadalupe River, whose habitat requirements for temperature, cover, and spawning substrate were not considered in development of the riparian mitigation plan. The long term record of salmon and steelhead in the area had been in evidence by the numerous anecdoctal reports in Skinner (1962, An Historical Review of the Fish and Wildlife Resources of the San Francisco Bay Area, Water Projects Branch Report #1, Departments of Water Resources and Fish and Game) as well as collections in the late 1980s by the Department of Fish and Game (Linda Ulmer, Region 3, communication dated January 8, 1987). In 1992, through the recommendation of the Service and others, the State Water Resources Control Board (SWRCB) imposed a number of conditions on its certification of the project pursuant to Section 401 of the Clean Water Act to ensure full mitigation of loss of vegetative shade cover, any associated thermal impacts, gravel losses, and measures to ensure fish passage. Fulfillment of those conditions were to be documented in a Mitigation and Monitoring Plan (MMP). To do so would require an assessment of impacts and mitigation needs for loss of habitat values within the stream channel and its banks, a habitat type known as Shaded Riverine Aquatic cover (SRA cover). SRA cover values are considered necessary for the protection of anadromous salmonids and water-associated wildlife species which use the Guadalupe River. Any recommended SRA cover mitigation would be in addition to the riparian mitigation plan, because the riparian plan did not provide sufficient improvement near or within the stream channel.

However, the Corps recognized that the MMP could not be finalized until the Service could conduct and complete a HEP for SRA cover impacts, and provide site recommendations to the Corps. The effect of a series of correspondence between the Corps, Service, and SWRCB was to allow construction of the first phase of the project (Contract 1 - I-880 to Hedding Street) to commence in July 1992 , with additional commitments from the Corps to revise the MMP to include a detailed plan of locations and quantities of SRA cover plantings based on Service recommendations. The draft HEP report was provided to the Corps in October 1993, recommending that Reach A and other sites be considered for such plantings. Soon thereafter, the local sponsor, Santa Clara Valley Water District (SCVWD), indicated that additional Reach A plantings were not possible for hydraulic reasons, and requested that the final HEP report be deferred pending development of a low-flow channel design which would include limited planting in Contract 3 (Grant Street to Coleman Avenue), the phase with the most significant amount of hardscape of the invert and/or banks. The Corps requested that we defer issuance of the final HEP report until such time that the consultant's design of that channel and plantings were complete. However, we proceeded with other scoped activities, including a revised thermal model analysis using our SNTEMP model and these results were provided to the Corps and SCVWD in July 1994.

Several events in the summer of 1994 led our agency to request (letter dated September 9, 1994) that the Corps complete its commitments prior to initiation of Contract 3. We were aware of the much greater direct losses of SRA cover in Contract 2 (Hedding Street to Coleman Avenue) than had previously occurred in Contract 1; and excavation of Contract 2 had begun in mid-1994, with removal of the vegetation to follow in 1995. Second, the fact that SCVWD had contracted with a consultant to comment on the draft HEP implied forthcoming issues that could delay our final

HEP report. Third, absent findings to the contrary, it could not be assumed that a re-design of the low-flow channel with limited plantings would substantially reduce SRA cover mitigation below that which we recommended in the draft report. It was clear in 1994 that the planning for SRA cover mitigation had fallen too far behind the timeline contemplated by the SWRCB in its May 8, 1993, clarification of conditional certification.

During 1995 and 1996, we participated in a number of related activities. We reviewed design documents for Contracts 2 and 3, and changes to the plant pallette and surface preparation of the riparian planting area. Our staff proposed a number of sites in the Park-Woz bypass for in-fill vegetation enhancement that would be consistent with habitat, aesthetic, and safety concerns. With our concurrence, additional temperature modeling and HEP tasks were conducted by a consultant for evaluating the proposed low-flow channel design and other mitigation sites, addressing matters of precision identified in the consultant's comments on our draft HEP report, and deciding assumptions to be used in both the new temperature model and HEP. At that time, Reach A plantings were still not considered viable given the known geometry and expected velocities and discharges under flood conditions. These activities culminated in another draft HEP report in late 1996, provided by a consultant, which concluded that only half of the habitat value loss predicted by the salmonid model could be mitigated in-kind with full development of habitat within both Reach 12 and Guadalupe Creek, and that the deficit stemmed from insufficient thermal mitigation. The out-of-kind measure of removing a small barrier to enhance passage to Alamitos Creek was proposed in that report, but we deemed it to be inconsistent with both the nature of the impact and traditional application of HEP. A less urgent, but still significant habitat value deficit also remained for non-salmonid species.

In late June, 1997, the Corps met with the Service and other State and Federal representatives to review and list a very broad range of supplemental mitigation options which could potentially contribute to a solution to these deficits. Further coordination was interrupted until early 1998, when the Service and other resource agencies agreed to participate in a facilitated negotiation with the Corps and local sponsor. Early in 1998, the local sponsor expressed a desire to investigate two suggestions from these supplemental options -- reconsideration of SRA cover plantings in Reach A, and avoiding impacts in Contracts 3a and 3b (Park to Coleman Avenues) by redesigning the project concept in this area as a covered bypass. At about the same time, the Corps wished to proceed with the features which were not included in the re-design concept (Contract 3c - Grant Street to Woz Way). Such further construction was clearly in conflict with the Service's desire that it be deferred until such time a mitigation plan for the entire project was in place.

The solution to this conflict was first outlined in an "early implementation package" developed by the Service in May 1998, which requested the Corps and local sponsors commit to complete a series of mitigation actions, the sum of which would not only be sufficient to mitigate the impacts of Contracts 1, 2, and 3c, but do so in a way that would preserve the salmonid resources and be consistent with the Service's policies of avoidance and minimization first, and preference to maximize on-site mitigation potential. The proposed package expressly conditioned further construction of the project upon scheduled completion of mitigation commitments.

Although there have been adjustments in the schedule for completion of these commitments, the essential elements of this mitigation package and relationship between construction and mitigation actions remain the same: on-site mitigation measures include a) limited areas in the Park-Woz bypass and in-fill/repair in Contracts 1 and 2; b) Reach A would be replanted to

provide most of the thermal mitigation but would do so over the long term; and c) Guadalupe Creek would be enhanced through replanting and other measures, its percolation ponds retired, and would remain thermally suitable for salmonids over the life of the project. All of these actions began prior to the onset of Contract 3c in 1999, and would be substantially complete by the year 2000, prior to the onset of Contracts 3a and 3b, with the sole exception of less than 1,000 linear feet of SRA cover infill in Contract 3 that must await completion of that contract. Other important elements of the package included slight adjustment of the Contract 3 design to avoid impacts in the vicinity of Woz Way, and agreement by the Service to quantify excess mitigation benefits anticipated from the Guadalupe Creek restoration that could be used by the local sponsor for other activities. Examples of the types of activities envisioned for this excess mitigation are ongoing channel maintenance and the Upper Guadalupe Flood Control Project. The agreement built in assurances that the iminent construction of Contract 3c would not impair habitat value or salmonid passage through inadequate functioning of the low-flow channel, by requiring sufficient hydraulic analysis.

Between 1994 and 1998, certain elements of mitigation were initiated under our review. These included the 20 acres of riparian plantings (and replantings) in Contracts 1 and 2, biotechnical repair of a Park-Woz bypass site near the Children's Discovery Museum, several other fixes done under permit to SCVWD to preserve the riparian mitigation area and river berm, and several SRA cover planting test areas: one on Reach A near I-880 and another on Guadalupe Creek downstream of Camden Road.

Also in 1998, we continued to participate in revision of the HEP that included the additional mitigation sites described above and re-design of Contracts 3a and 3b as a bypass, and we developed a project-specific model to account for values to species other than salmonids. Eventually, after consideration of the revised HEP and temperature model analyses, we achieved agreement with the Corps and local sponsor that the essential elements of the early implementation package, and redesign of Contracts 3a and 3b, would be sufficient to mitigate impacts of the revised project design. This agreement was outlined in a Dispute Resolution Memorandum signed by all involved parties and amended in summer 1998, and supplemented in April 1999. Through the remainder of 1999, we participated in the development and revision of two related documents: a mitigation and monitoring plan, and a measureable objectives and adaptive management plan. Both now conform substantially with the provisions of the April 1999 agreement. We expect to conduct a review of a revised draft HEP report that includes Reach A and the new Contract 3a-3b bypass, in the very near future.

The outstanding activities which we hope to resolve in the near future involve the final design of the low-flow channel in Contract 3c and overall vegetation allowances in Reach A. As you know, we have taken a non-traditional approach of granting credit for hardscaped sections where, as in the low-flow channel sections of Contract 3c, cellular concrete mattress (CCM) is expected to provide limited vegetation and modest aquatic functions and values. Originally, this was conceived of as a trapezoidal channel formed out of the same CCM used in the floodway, but there has been discussion to replace the CCM sideslopes of the low flow channel with poured concrete steps as a safety measure, a feature which may modestly attenuate habitat quality. We believe this issue can be readily addressed by negotiation with the Corps, local sponsors, and other resource agency representatives, a process that must occur in order to obtain resource agency approval of the low-flow channel design as mandated by the SWRCB.

The matter of Reach A capacity has been of greater concern because of a history of conflicting hydraulic analyses. This site is utterly essential to achieve thermal mitigation for the flood control project. In the same reach, but on a bench farther from the river edge, 7 acres of riparian planting were planned in 1993 to mitigate the California Department of Transportation's (Caltrans) Route 87 project (Julian Street to Route 101); these plantings are now scheduled for installation in fall 2000. Although SCVWD had rejected the site for SRA cover plantings in 1993, they later proposed this site for reconsideration on the basis of a preliminary 1998 re-analysis that concluded SRA cover plantings could be done. After further study, SCVWD is now uncertain whether both mitigation plans can be accommodated in Reach A. The Corps has informally indicated that it would be possible to allow both the Caltrans and Corps SRA cover mitigation in Reach A with some additional excavation and maintenance, however, the analysis and coordination necessary for these adjustments are not yet final.

As we discussed earlier in this letter, it was the Caltrans project which, in part, prompted a 1989 revision (and substantial reduction) of the riparian mitigation for the flood control project from 27 to 20 acres. Much later, in 1998, we agreed to a SCVWD request to further modify those 20 acres to a plant pallete of more xeric, slower-growing species because of site conditions unknown at the time of the 1984 HEP. If hydraulic capacity once again became an issue that required substantial alteration of either the Caltrans riparian mitigation plan or the Corps SRA cover mitigation plan in Reach A, we would need to re-evaluate the flood control and transportation projects together, considering the overall balance of riparian impacts with proposed mitigation measures, separate from SRA cover impacts and mitigation measures.

If you have any questions, please contact Steve Schoenberg of my staff at (916) 414-6564.

Sincerely,

Dale A. Pierce

for Wayne S. White
Field Supervisor

cc: FWS, AES, Portland, OR
CDFG, Region III, Yountville, CA
CONCUR, Berkeley, CA
NMFS, Santa Rosa, CA
NMFS, Sacramento, CA
Natural Heritage Institute, San Francisco, CA
San Jose Redevelopment Agency, San Jose, CA
SCVWD, San Jose, CA
SWRCB, Sacramento, CA
RWQCB, Oakand, CA

STATE OF CALIFORNIA – THE RESOURCES AGENCY

GRAY DAVIS, *Governor*

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
P.O. BOX 942896
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(916) 653-6624 Fax: (916) 653-9824
calshpo@ohp.parks.ca.gov

June 5, 2000

REPLY TO: COE000512A

Mark S. Capik, Chief
Planning Division
US Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, CA 95814-2922

Subject: **Extension Area for Guadalupe River Flood Control Project, San Jose, Santa Clara County, California**

Dear Mr. Capik:

Thank you for consulting me concerning the undertaking cited above pursuant to 36 CFR 800, regulations implementing Section 106 of the National Historic Preservation Act. I understand that a parcel of land approximately one-acre in size was added to the Area of Potential Effects (APE) for extension of a staging area for the Guadalupe River Flood Control Project. Your letter of May 12, 2000 requested my review and comments on your determination that no historic properties will be affected by use of this one-acre parcel of land as a staging area in conjunction with implementation of the undertaking.

Review of the supporting documentation provided indicates that reasonable measures were taken to identify historic properties within the boundaries of the staging area land parcel. These efforts to identify historic properties conform to applicable standards and the documentation provided is consistent with the requirements of § 800.11(d) for a finding of "no historic properties affected."

Your consideration of historic properties in the project planning process is appreciated. If you have any questions, please contact staff archaeologist Charles Whatford at (916) 653-2716 or cwhat@ohp.parks.ca.gov

Sincerely,

M Greutzberg for

Daniel Abeyta, Acting
State Historic Preservation Officer

MEMORANDUM OF AGREEMENT
REGARDING THE GUADALUPE RIVER FLOOD CONTROL PROJECT

WHEREAS, the U.S. Army Corps of Engineers, Sacramento District (Corps), has determined that the Guadalupe River Flood Control Project (Project) will have an effect upon the River Street Historic District, an historic property eligible for inclusion in the National Register of Historic Places, and has consulted with the California State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation (Council) pursuant to 36 CFR Part 800, regulations implementing Section 106 of the National Historic Preservation Act (16 U.S.C. 470f) and

WHEREAS, all of the Project Area of Potential Effect has been inventoried for cultural resources, and the resources evaluated for eligibility for inclusion in the National Register of Historic Places in consultation with the SHPO; and

WHEREAS, alternatives in project design to avoid affecting known historic properties have been examined by the Corps and found to be infeasible;

WHEREAS, public concerns have been solicited regarding both prehistoric archeological sites and structures of the built environment; and

WHEREAS, the Preservation Action Council of San Jose (PACSJ) has participated in the consultation and has been invited to concur in this Memorandum of Agreement;

NOW, THEREFORE, the Corps and the California SHPO, and the Council agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the undertaking on historic properties.

Stipulations

The Corps will ensure that the following measures are carried out:

1. Prior to taking any action which could affect the River Street Historic District, an historic property, the Corps will consult with the Historic American Buildings Survey (HABS) Division of the National Park Service to determine what documentation shall be required. The Corps shall ensure that unless otherwise agreed to by HABS, all documentation is completed and accepted by HABS prior to any alteration or demolition, and that copies of this documentation are made available to the SHPO and appropriate local archives designated by the SHPO.

2. In consultation with the SHPO, the Council and PACSJ, an analysis to evaluate alternatives to the demolition of historic structures in the River Street Historic District will be undertaken by the Corps. This alternatives analysis, hereinafter called the analysis, will include but may not be limited to:

(a) A market study for identification and evaluation of alternatives to the demolition of the historic structures, including relocating buildings onto nearby vacant parcels to retain the integrity of the historic district, to include:

(1) Study of similar districts and their uses;

(2) Integration of the River Street Historic District with surrounding and downtown land uses;

(3) Determination of viable and alternative uses of structures;

(4) Identification of funding sources for renovation and operation; and

(5) Projected revenues and financial benefits for the City of San Jose; and

(b) The development of a marketing plan to include:

(1) An information package about the property, including but not limited to:

- photographs of the property;
- a parcel map;
- information on the property's historic significance;
- information on the property's cost;
- information on Federal tax benefits for rehabilitation of historic structures;
- notification that the purchaser will be required to rehabilitate or maintain the property in accordance with the recommended approaches in the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings U.S. Department of the Interior, National Park Service, 1983 and
- notification of any requirement for inclusion of a restrictive covenant in the transfer document.

(2) A distribution list of potential purchasers or transferees.

(3) An advertising plan and schedule.

(4) A schedule for receiving and reviewing offers.

The analysis will also address the structural feasibility of relocating any of the historic structures scheduled for demolition, costs to physically move one or more structures, costs for seismic and other life safety retrofits, and identification of new owners and reuse for buildings after relocation. The analysis shall identify measures for removal that minimizes damage to the salvaged elements. If a structure can be relocated, the Corps will consult with the SHPO, the Council and PACSJ who will assist the Corps to develop the marketing plan. The costs for removal, salvage and relocation shall be borne by the Corps subject to the limitations of Public Law 93-291 (16 U.S.C.469). If additional funds are needed, the Corps will consult with the SHPO, the Council and PACSJ to determine if additional funding from public or private sources may be available.

3. The Corps will consult with the SHPO and PACSJ to identify any architectural elements from those buildings which will not be relocated and which could be salvaged for reuse in other historic buildings, incorporated in new construction, used in an interpretive display, or stored for future use.

4. The SHPO, the Council and PACSJ will be provided with the opportunity to review and comment upon scope of work for the analysis in accordance with Stipulation 10 in this-agreement.

5. The analysis shall be considered within the context of the recommended approaches in "Moving Historic Buildings" (John Obed Curtis, 1979, American Association for State and Local History) and the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings. The draft report resulting from the analysis will be submitted to the SHPO, the Council and PACSJ for review and comment pursuant to Stipulation 10.

6. Should it be determined that all or part of the River Street Historic District affected by the Guadalupe River Flood Control Project can be relocated or salvaged, the Corps will develop and implement appropriate measures for doing so in consultation with the SHPO, the Council, and PACSJ.

7. The Preservation Action Council of San Jose will:

(a) Be provided with an opportunity to review and comment upon the scope of work for the analysis, and

(b) Provide assistance in identifying uses and community resources for the analysis. To avoid delay in advertising for construction of Contract 3 of the Guadalupe River Flood Control Project, all efforts by PACSJ will be completed in a timely manner and in accordance with the schedules of the Corps. The PACSJ will review the scope of work and draft reports or other documents on or before 30 calendar days from receipt of each document in accordance with Stipulation 10.

8. In the event archeological resources are discovered during Project construction, work will cease in those areas until the Corps completes consultation with the SHPO regarding eligibility of the sites to the National Register of Historic Places. The Corps will provide the SHPO and the Council an opportunity to review and comment upon proposed treatment in accordance with Stipulation 9 of this Agreement. The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation (48 FR 44716) will be utilized as a basis for any proposed treatment, including data recovery, and for establishing professional qualifications and reporting requirements. The costs for data recovery shall be borne by the Corps subject to the limitations of Public Law 93-291 (16 U.S.C.469).

9. In the event Native American remains are discovered during Project construction, the Corps will develop treatment of those remains in consultation with the SHPO, the Council and appropriate Native American descendants. Costs associated with this effort shall be borne by the Corps subject to the limitations of Public Law 93-291 (16 U.S.C.469).

10. The Corps will provide the SHPO, the Council, and PACSJ with the opportunity to review and comment on any plans, specifications, contracts, or other documents provided for review. These reviews may be concurrent. The failure of any party to comment within 30 days after receipt of such documents shall not prevent the Corps from implementing them. Should any party to this agreement object within thirty (30) days after receipt to any plans, specifications, contracts, or other documents provided for review pursuant to this agreement, or to the manner in which this agreement is being implemented, the Corps shall consult with the objecting party to resolve the objection. If the Corps determines that the objection cannot be resolved, the Corps shall forward all documentation relevant to the dispute to the Council. Within thirty (30) days after receipt of all pertinent documentation, the Council will either:

(1) Provide the Corps with recommendations, which the Corps will take into account in reaching a final decision regarding the dispute; or

(2) Notify the Corps that it will comment pursuant to 36 CFR 800.6(b) and proceed to comment. Any Council comment provided in response to such a request will be taken into account

by the Corps in accordance with 36 CFR 800.6(c)(2) with reference to the subject to the dispute.

11. If any of the signatories to this Agreement believes that the terms of the Agreement cannot be carried out, or that an amendment to the terms of the Agreement must be made, that signatory shall immediately notify the other signatories and request consultation to amend this Agreement. The process of amending the Agreement shall be the same as that exercised in creating the original Agreement.

Execution of this Memorandum of Agreement and implementation of its terms evidence that the Corps has afforded the Council an opportunity to comment on the Guadalupe River Flood Control Project and its effects on historic properties, and that the Corps has taken into account the effects of the undertaking on historic properties.

ADVISORY COUNCIL ON HISTORIC PRESERVATION

By: Robert D. Bush Date: 6-18-92

U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT

By: Laurence R. Sadoff Date: 27 May 92
Laurence R. Sadoff
Colonel, Corps of Engineers
District Engineer

CALIFORNIA STATE HISTORIC PRESERVATION OFFICER

By: Steade R. Craigo Date: 5-27-92
State Historic Preservation Officer

Concur:

PRESERVATION ACTION COUNCIL OF SAN JOSE

By: Karita M. Hummer Date: 5-31-92
President

United States Department of the Interior
Fish and Wildlife Service

Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846

IN REPLY REFER TO:
1-1-00-F-176

August 16, 2000

Mr. Mark Capik
Chief, Planning Division
U.S. Army Corps of Engineers
Sacramento District
1325 J Street
Sacramento, California 95814-2922

Subject: Formal Endangered Species Consultation on the Guadalupe River Project, Downtown San Jose, California

Dear Mr. Capik:

This is in response to your March 10, 2000, request for formal consultation with the U.S. Fish and Wildlife Service (Service) on the Guadalupe River Project (Segments 3A-C) in downtown San Jose in Santa Clara County, California. Your request was received in our office on March 14, 2000. This document represents the Service's biological opinion on the effects of the action on western snowy plover (*Charadrius alexandrinus nivosus*) (snowy plover) in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act). We have determined that the project, as proposed, is not likely to adversely affect California red-legged frog (*Rana aurora draytonii*), salt marsh harvest mouse (*Reithrodontomys raviventris raviventris*), and California clapper rail (*Rallus longirostris obsoletus*), and these species are not addressed further in this document.

In addition to consulting with the Service, the U.S. Army Corps of Engineers (Corps) should coordinate with the National Marine Fisheries Service on project impacts to listed anadromous fish that occur within the project area.

This biological opinion is based on information provided in the March 3, 2000, biological assessment, a meeting between the Service and the U.S. Army Corps of Engineers (Corps) on December 7, 1999, and e-mail correspondence between Nina Bicknese of the Corps and Carmen Thomas of the Service on February 6, 2000, and February 28, 2000, field investigations, and other sources of information. A complete administrative record of this consultation is on file in this office.

Consultation History

6/99	The Corps submitted a Biological Assessment and biological data report for Segment 3C Phase 1 of the Guadalupe River Project in the city of San Jose and requested concurrence from the Service on a determination that the project was not likely to adversely affect listed/proposed threatened or endangered species.
6/23/99	The Service concurred with the findings of the Corps' June 1999, Biological Assessment and Biological Data Report (Service file no.: 1-1-99-I-1771).
8/30/99	The Corps requested an updated species list.
9/29/99	The Service provided the Corps with an updated species list (Service file no.: 1-1-99-SP-2052).
12/7/99	The Service met with the Corps to discuss species to include in the effects analyses for downtown San Jose (segments 3A and 3B) of the Guadalupe River Project. The Service recommended consideration of the red-legged frog, snowy plover, clapper rail, and harvest mouse.
2/6/00	The Corps requested comments from the Service on a draft Biological Assessment for segments 3A and 3B.
2/28/00	The Service provided comments on the draft Biological Assessment (Service file no.: 1-1-00-I-1450).
3/14/00	The Corps requested formal consultation with the Service on Phase 5, segments 3A and 3B, of the Guadalupe River Project in the city of San Jose (Service file no.: 1-1-00-I-1450).
5/25/00	The Corps requested an updated species list.
6/24/00	The Service provided an updated species list (Service file no.: 00-SP-1905).

BIOLOGICAL OPINION

Description of the Proposed Action

The Downtown Guadalupe River Flood Control Project (Guadalupe River Project) is a phased project authorized by Congress to provide 100 year flood protection to downtown San Jose. The Service previously consulted on the project in 1984 and concluded that

the project was not likely to adversely affect any listed species. Construction on the project began in 1992, but the third and final project phase was stopped in 1996 due to concerns regarding the adequacy of proposed mitigation and additional listings of threatened/endangered species. This consultation covers only the impacts of Phase 3 (Segments A-C) of the Guadalupe River Project in downtown San Jose. The Service recognizes however, that Santa Clara Valley Water District (SCVWD) operates the larger water control system (of which the Guadalupe River Project is part), which impacts western snowy plovers through occasional flooding of nesting habitat.

The Service has determined that the proposed action is not likely to result in adverse impacts to red-legged frogs, harvest mice, and clapper rails. This determination is based on current information presented to us by the project proponent (SCVWD and Corps). This information includes an analysis of the past and current condition of habitats suitable for these species at the outlet for this flood control system-Alviso and Guadalupe Sloughs-as well as the projected impacts with the operation of this project. However, the project proponents have proposed a monitoring strategy that will evaluate the future project operations and the effects-or lack thereof-to habitats suitable for harvest mice and clapper rails. The Service will evaluate the results of this monitoring and determinations for these species may be reevaluated in the future.

The proposed Guadalupe River Project (GRP) will be constructed along 2.6 miles of the Guadalupe River between Grant Street (just north of highway I-280) and I-880, in downtown San Jose, Santa Clara County, California (see Figures 1 and 2). The Service previously consulted on Segments 1 and 2 of the GRP between I-800 and Coleman Avenue (Service file no.: 1-1-99-I-1771), and construction was completed in 1996. The unconstructed portions of the GRP (the proposed project) are located between Coleman Avenue and Grant Street. The proposed project is divided into three segments, 3A, 3B, and 3C. Segment 3A is located between Coleman Avenue and New Julian Street, Segment 3B is located between New Julian Street and Park Avenue, and Segment 3C is located at the upstream end of the GRP between Woz Way and Grant Street. An underground culvert bypass will be constructed on the east bank in Segment 3A and part of the east bank of Segment 3B. Two inlets for the culvert will be near the West Santa Clara Street bridge, and a third inlet will be downstream from the Los Gatos Creek confluence with the Guadalupe River. The outlets for the culvert will be near the Coleman Avenue bridge. Bank armoring is proposed at the culvert inlets and outlets and under the New Julian bridge. Segment 3C is separated from segments 3A and 3B by the existing Woz Way-Park Avenue bypass reach. This bypass reach is not part of this project and therefore not considered in this biological opinion. Section 3C Phase 2 includes construction of an inlet, and section 3B includes construction of the outlet to the existing Woz Way to Park Avenue bypass. Construction of flood protection in segments 3A through 3C is scheduled for 2001-2002.

Segment 3A: There will be approximately 695 linear feet (lf) of west riverbank and river bottom armoring in Segment 3A using gabions to armor the toe of the slope and stone terraces to armor the river bank (Figure 2). A wheel-chair accessible ramp would be installed on the west bank armoring to allow pedestrian-trail passage under the Coleman Avenue Bridge. On the east bank, there will be approximately 745 lf of bank armoring. Gabions will armor the toe of the slope and a vertical retaining wall will armor the river bank. Approximately 200 lf of the east bank may also be armored with gabions at the New Julian Street Bridge to provide for a pedestrian undercrossing of the bridge. The river bottom will be armored with concrete cellular mattresses upstream and below the Coleman Avenue Bridge for 695 lf. The armored river bottom would contain a low-flow channel with 5 to 7 concrete check structures. The low flow channel with check structure design will use concrete sills with, logs, boulders, and gravel placed at grade and on top of the concrete cellular mattress-armored river bottom to concentrate low flows into the channel. The check-structure sills would be placed at spacing of 200 to 300 feet within the low-flow channel of the armored channel bed. Construction of the bottom armoring and the low flow channel check structures requires diverting the water from the work area. The outlet structures for the proposed bypass system will be located in Segment 3A near Coleman Avenue. The inlets and outlets of the proposed bypass system will remain closed with bulkhead retaining walls and the downtown Guadalupe River Project will not be made operational until SCVWD completes the Lower Guadalupe River Project.

Between 9 and 15 invert stabilization structures (small weirs) will be placed in the channel bed in the unarmored sections of Segments 3A and 3B between Coleman Avenue and Santa Clara Street. The footings of the invert stabilization structures will be constructed of concrete. Logs will be fastened to the top of the footings to create drops in grade between structures of one foot or less. Construction of the invert stabilization structures will require that water be diverted from the construction area. The invert stabilization structures and the previously mentioned low-flow channel check structures will be built using a front-end loader and backhoes. A trench approximately 3 to 4 feet deep by 2 feet wide will be excavated in the channel bed. Steel reinforcing will be placed within the framework, and concrete will be pumped through an overhead delivery system to avoid impacts on riparian vegetation growing on the banks of Segments 3A (and 3B). The concrete will be pumped from trucks at road crossings or at unvegetated areas on the top of the bank. After the concrete cures, the formwork will be removed, and suitable channel bed material will be used to backfill the trench.

Union Pacific Railroad (UPRR) bridges 3 and 4 will be removed, and it is assumed that bridge 4 will be replaced by others outside of this project. The Old Julian Street Bridge may also be removed. The sewer line that crosses the river under the New Julian Street Bridge will be removed and replaced with a line under the river on the downstream side of the bridge. The new sewer line will be constructed beneath the river using a sewer siphon system.

3A Recreational Trails: Recreational trails in Segment 3A include an 18-foot wide asphalt trail/maintenance road on the top of both the east and west banks from New Julian Street to Coleman Avenue. The eastern bank trail will cross the under the New Julian Street Bridge with stairs on the upstream and downstream side of New Julian Street to allow pedestrian access under the bridge. The top-of-bank trail will continue downstream to the bank armoring near Coleman Avenue, where it descends and passes under the Coleman Avenue Bridge. On the western bank, the trail will cross under the New Julian Bridge and continue on top of bank to the armored bank area near Coleman Avenue. Here a 300-foot-long wheelchair-accessible ramp will cross under the Coleman Avenue Bridge to connect with the existing trail system in GRP Segments 1 and 2.

Segment 3B: There will be approximately 1,861 lf of riverbank armoring on the west bank, 2,231 lf of river bank armoring on the east bank, and 1,940 lf of river bottom armoring between West Santa Clara Street and Park Avenue. East bank armoring will include gabions at the toe of the slope and stone terraces on the slope. West bank armoring will include a vertical concrete retaining wall between 18 and 22 feet high. The river bottom will be armored with concrete cellular mattresses and contain a low-flow channel with check structures, as previously described. A new sewer line will be constructed under the armored channel bottom downstream from West Santa Clara Street. The outlet structure for the existing Woz Way to Park Avenue Bypass will be part of the Segment 3B construction. The outlet for this Bypass will also be covered with a bulkhead retaining wall to prevent operation of the GRP until the Lower Project is completed. A U.S. Geological Survey gaging weir upstream from the St. John Street bridge will be removed and replaced with an invert stabilization structure, which will be installed as described above and without impacts to existing shaded riverine aquatic habitat. The Saint John Street bridge may be demolished. If demolished, the bridge would be replaced with a pedestrian/maintenance bridge, which which would cause disturbance to riverbed substrate and vegetation on both banks. Currently, there is a sewer line beneath the bridge. If the bridge is demolished, a replacement line would be constructed, using a sewer siphon system, beneath the river on the downstream side of the bridge.

3B Recreational Trails: On the east bank, the pedestrian trail/maintenance road will continue from the existing Woz Way to Park Avenue trail. There will be two 18-foot-wide trails between Park Avenue and Santa Clara Street, one top-of-bank trail, and another 6 feet above summer water level on top of the stone terraces. The top-of–bank trail will have stairs down to the river at Park Avenue, San Fernando Street, and West Santa Clara. On the west bank the trail will continue from the existing Woz Way to San Fernando and terminate in a switch-back ramp up to a pedestrian overlook.

Segment 3C Phase 2 (3CP2): There will be 1,250 lf of armoring on the west bank of the river between Woz Way and Grant Street, using gabions at the toe of the slope and rock

terraces on the bank. Approximately 730 lf of armoring will be constructed on the east bank between previous segment 3C Phase 1 work and Grant Street. This armoring includes gabions at the toe of the slope and stone terraces on the river bank. The river bottom will be armored with concrete cellular mattresses and concrete for 1,045 ft. and will contain a NMFS and Service-approved trapezoidal/boulder low-flow channel for fish passage. The inlet structure for the existing Woz Way to Park Avenue Bypass will be constructed on the west bank as part of this phase. A concrete weir will be included in the Woz-Way/Park Avenue bypass inlet. The inlet will remain closed with a bulkhead retaining wall until the Lower Guadalupe River Project is completed and the downtown GRP (this project) is operational.

3CP2 Recreational Trails: A trail system with a top-of-bank trail and a trail six ft. above the summer water level along the armored bank will be constructed on the west bank between Woz Way and I-280. A stairway and handicap access ramp will be constructed on the west bank upstream from the Woz Way bridge. An 18 foot wide trail will be constructed on the east bank between Woz Way and Grant Avenue, with an access point constructed downstream from Grant Street. This access point will include either stairs or a ramp.

Segment 3C Phase 3(3CP3): There will be a total of 1,833 lf of flood-training walls made of concrete or concrete masonry units in the Interstate 280 (I-280)/Route 87 interchange area. The flood-training walls will direct overbank flood flows from above the project into the river channel. On the east side of the river, 860 lf of flood-training walls will be constructed between the I-280 bridge abutment and Almaden Avenue. On the west bank of the river, 973 lf of flood-training wall will be constructed in the I-280/ Route 87 interchange area. An additional 620 lf of earthen berm will also be constructed in this area. Wall and berm height will vary from 0.5 to 4.5 feet.

3CP3 Recreational Trails: An 18 ft. wide asphalt trail/maintenance access road will be constructed on top of both banks of segment 3A between New Julian Street and Coleman Avenue. In Segment 3B, there will be two trails on the east bank between Park Avenue and Santa Clara Street: a 12 ft. wide trail on top of the stone terraces, six feet above summer water level; and an 18 ft. wide trail/maintenance access road on top of the bank. On the west bank of Segment 3B, the existing Woz Way-Park Avenue trial will be extended under Park Avenue and terminate at the proposed pedestrian overlook.

Conservation Measures

The following measures have been proposed to minimize and avoid impacts to listed species. All conservation measures will be completed before or concurrent with construction work.

Downstream of the proposed project are a number of salt ponds owned and operated by Cargill Salt (A5-A12, see Figure 3). Under existing conditions, flows in Alviso Slough (the Guadalupe River flows into Alviso Slough just downstream of the city of San Jose) greater than approximately 6,400 cubic feet per second begin to overtop the west bank levee near the city of Alviso. The overtopping causes water to flow into Pond A8W. When water in Pond A8W reaches a depth of approximately 1.5 feet, it flows into Pond A8D. Snowy plovers nest in ponds A6 and A8D; nests in Pond A8D are currently at risk of inundation during flood events.

To minimize and avoid impacts to snowy plovers, Pond A8 will be pumped when snowy plover nests are at risk from inundation, or when water depth exceeds a maximum standard determined by the Service. In addition, project sponsors will monitor flood flows and surface water levels in Alviso Slough and evaporation pond A8D to determine whether changes occur as a result of the GRP construction. Data will be summarized and presented to the Service on a bi-annual basis. Monitoring methods for the evaporation pond will be approved by the Service prior to implementation.

Status of the Species

On March 5, 1993, the Pacific coast population of the western snowy plover (*Charadrius alexandrinus nivosus*) (snowy plover) was listed as threatened under provisions of the Endangered Species Act of 1973, as amended (58 **FR** 12864). In California, the western snowy plover has been classified by the California Department of Fish and Game as a "species of special concern" throughout all of California since 1978 and is likely to continue to be retained as such in the pending list revision (K. Hunting pers. comm. 1999). A detailed account of the taxonomy, ecology, and biology of the snowy plover is presented in the listing package (58 **FR** 12864) and critical habitat rule (64 **FR** 68508). Supplemental information is provided below.

Although the majority of snowy plovers are site-faithful, returning to the same breeding site in subsequent breeding seasons, some also disperse within and between years (Warriner *et al.* 1986, Stenzel *et al.* 1994). Birds occasionally nest in the exact location as the previous year (Warriner *et al.* 1986). Snowy plovers renest readily after loss of their eggs (Wilson 1980, Warriner *et al.* 1986). After losing a clutch or brood or successfully hatching a nest, plovers may renest at the same site or move up to several hundred miles to nest at other sites (Stenzel *et al.* 1994, Powell *et al.* 1997). Renesting occurs 2 to 14 days after failure of a clutch and up to 5 renesting attempts have been observed for a pair (Warriner *et al.* 1986). The first chick hatched remains in or near the nest until other eggs (or at least the second egg) hatch. The adult plover, while incubating the eggs, also broods the first chick. Plover chicks are precocial, leaving the nest within hours after hatching to search for food. They are not able to fly for approximately 4 weeks after hatching; fledging requires 28 to 33 days (mean 31 days) (Warriner *et al.* 1986).

Overall, western snowy plover numbers have declined on the U.S. Pacific coast over the past century. Habitat degradation caused by human disturbance, urban development, introduced beachgrass (*Ammophila* spp.), and expanding predator populations have resulted in a decline in active nesting areas and in the size of the breeding and wintering populations (58 **FR** 12864). In the south Bay, water diversion/impoundments, salt pond operations, impaired water quality, and natural factors (*e.g.* inclement weather) continue to affect the quality and quantity of snowy plover habitat (58 **FR** 12864). The reasons for decline and degree of threats vary by geographic location.

Water diversion and impoundment of creeks and rivers may negatively affect snowy plover habitat by reducing sand delivery to beaches and degrading water quality. Water diversions are a major threat to snowy plovers when they impair hydrologic processes (such as migration of creek and river mouths) that maintain open habitat at river and creek mouths by retarding the spread of introduced beachgrass (*Ammophila* spp.) and other vegetation. Water diversion, impoundment or stabilization activities could include construction of dams and irrigation, flood control and municipal water development projects.

Salt ponds of San Francisco Bay and San Diego Bay, which are filled and drained as part of the salt production process, provide breeding and wintering habitat for snowy plovers. Dry salt ponds and unvegetated salt pond levees are used as plover nesting habitat. Ponds with shallow water provide important foraging habitat for plovers. However, drying and refilling of ponds during the nesting season can first attract nesting plovers to the area and then destroy the nests due to flooding. Also, human disturbance resulting from maintenance activities associated with the operation of commercial salt ponds (*i.e.*, levee reconstruction and maintenance of facilities) can result the loss of snowy plovers and alteration or disturbance of their habitat. If conducted during the snowy plover breeding season, reconstruction of salt pond levees could destroy snowy plover nests. Maintenance activities which are conducted by vehicles, on foot, or through the use of dredging equipment could result in direct mortality or harassment of snowy plovers (see dredging, pedestrian and motorized vehicle sections).

Many areas used as habitat by snowy plovers contain channelized streams or outfalls receiving run-off from urban, industrial and agricultural areas. Non-point sources of water pollution (including hydrocarbons, heavy metals, and commercial and household chemicals) could end up at coastal beaches used as plover foraging areas. In 1995, three dead male plovers (all banded and local breeders) were found in an area containing local outfalls, including an outfall connected to a sewage treatment plant at Monterey Bay. By the beginning of the next breeding season, it was discovered that another male snowy plover from this area disappeared and possibly died. One of the birds was analyzed through necropsy and found to have an enlarged liver, but it could not be determined whether there was a relationship between the mortality and the outfall (Point Reyes Bird Observatory unpubl. data).

Critical habitat was established for the snowy plover on December 7, 1999. In California, a total of 19 areas along the coast were designated as critical habitat areas. No critical habitat was designated for Santa Clara County where the project occurs.

Environmental Baseline

It is not known whether the snowy plover historically nested in San Francisco Bay prior to the construction of salt evaporator ponds beginning in 1860 (Ryan and Parkin 1998). However, snowy plovers have wintered on San Francisco Bay since at least the late 1800s, as indicated by a specimen dated November 8, 1889, in the California Museum of Vertebrate Zoology (Grinnell *et al.* 1918). Surveys conducted during 1977-1980 estimated 1,593 adult snowy plovers along coastal California (Page and Stenzel 1981). As of 1980, the snowy plover had disappeared from significant parts of its coastal California breeding range. It was absent from previously identified breeding beaches in San Diego, Los Angeles, Orange, Ventura, Santa Barbara, Santa Cruz, and Sonoma counties. Subsequent coast-wide surveys by Point Reyes Bird Observatory in 1989 and 1991 indicated a further decline in numbers of breeding adult plovers during the decade after the 1977-1980 survey. The decline was approximately 40 percent in San Francisco Bay. The most recent coast-wide survey was conducted in 1995, and suggested a further 17.3 percent decline in the number of breeding plovers. This constitutes an overall decline of 21 percent since the initial surveys of 1977-1980. Because San Francisco Bay was not surveyed in 1995, it is not known whether numbers there have changed from 1991 levels. When last surveyed in 1991, just over 200 adults were counted during the breeding season in San Francisco Bay. Almost all were in salt evaporation ponds in south San Francisco Bay.

Snowy plovers were recorded nesting on salt evaporation pond levees in Alviso as early as 1947 (Smith and Smith 1947). Breeding was confirmed in the Alviso salt ponds annually during the 1950s (Linsdale 1951; Sibley 1952; Cogwell 1956, Williams 1957, Cutler and Pugh 1959), with a high of 14 nests found in 1955 (Smith 1955). In 1971, Gill (1972) found nesting snowy plovers on the Knapp Gun Club property near the mouth of Alviso Slough. Page and Stenzel (1979) recorded snowy plovers in each of the three salt evaporation ponds bordering the south side of Alviso Slough (A6, A7, and A8).

Nesting snowy plovers have recently been recorded in salt evaporation ponds A6 and A8 (Ryan and Parkin 1988) (Figure 3). Snowy plovers were observed in pond A6 every year between 1986 and 1994; breeding was confirmed during five of the nine years. Snowy plovers were also observed almost annually in pond A8 between 1981 and 1997; breeding was confirmed during nine of the 11 years. The San Francisco Bird Observatory did not conduct surveys on pond A8 in 1989 or 1993, however, incidental observations detected snowy plovers on the pond in both years (USACOE 2000). In

addition, H.T. Harvey and Associates surveyed pond A8 in 1998 and 1999, and observed nesting snowy plovers both years (USACOE 2000).

Snowy plovers have occasionally been observed foraging in the diked evaporation ponds on the northeast side of Alviso Slough (ponds A9-A12) by birders. However, these ponds usually contain water year-round, making them unlikely places for plovers to nest. The only recent nesting record in the vicinity of these evaporation ponds consists of one to two pairs that have nested in some years in a small impoundment between pond A12 and the railroad tracks, north of the Alviso marina (USACOE 2000).

Effects of the Proposed Action

Construction of the GRP, as currently described, will not result in direct effects on the western snowy plover. However, indirect effects to snowy plovers nesting in the Alviso salt ponds (especially pond A8W and A8D), may result from flood events. Because the salt ponds are downstream of the GRP, they remain within the action area as defined by 50 CFR § 402.02. Under existing conditions, flows in Alviso Slough greater than approximately 6,400 cubic feet per second (cfs) begin to overtop the west bank levee near the city of Alviso. The overtopping causes water to flow into Pond A8W. When the water depth in Pond A8W reaches 1.5 feet, it then flows into Pond A8D. Plovers currently nest in Pond A8D but have not recently nested in Pond A8W.

Any flooding that occurs during the snowy plover breeding season (mid-March through mid-September) may reduce or eliminate breeding success in Pond A8D for that year. The minimization measures are fully described in the Project Description section. In brief, if Pond A8D is flooded after the initiation of this project, the project proponents will pump Pond A8D when the water level exceeds a maximum depth determined by the Service, or when snowy plover nests are at risk from inundation. In addition, the project sponsors will monitor flood flows and surface water levels in Alviso Slough and in evaporation pond A8D. The goal of the monitoring is to determine whether flood frequency or inundation period within pond A8D changes as a result of the GRP. The monitoring program is described in the Biological Data Report (USACE 2000), and will be approved by the Service prior to being implemented.

Cumulative Effects

Cumulative effects include the effects of future State, Tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Cumulative effects of the proposed project on snowy plovers will include potentially compromised levee strength surrounding Pond A8, due to increased velocities in Guadalupe River and Alviso Slough. Many of the channel improvements proposed by this project consist of a hard surface, such as concrete or riprap. This 'hardscape' in the bed and on the banks of a river increases flow velocities, which places downstream levees at greater risk of damage and failure.

Conclusion

After reviewing the current status of western snowy plovers, the environmental baseline for the action area, the effects of the proposed Guadalupe River Project in downtown San Jose and the cumulative effects, it is the Service's biological opinion that the project, as proposed, is not likely to jeopardize the continued existence of this species. Critical habitat for the western snowy plover has been designated in Humboldt, Sonoma, Marin, San Mateo, Santa Cruz, Monterey, San Luis Obispo, Santa Barbara, Ventura, Los Angeles, and San Diego counties, however, this action does not affect that area and no destruction or adverse modification of critical habitat is anticipated.

INCIDENTAL TAKE STATEMENT

Section 9(a)(1) of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened fish and wildlife species without special exemption. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harass is defined by the Service as an intentional or negligent act or omission which creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Harm is defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by impairing behavioral patterns including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with this Incidental Take Statement.

The measures described below are non-discretionary, and must be implemented by the agency so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, in order for the exemption in section 7(o)(2) to apply. The Corps has a continuing duty to regulate the activity covered by this incidental take statement. If the Corps (1) fails to require the applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, and/or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

Amount or Extent of Take

The Service does not anticipate the proposed action will incidentally take any western snowy plover adults, chicks, or eggs. Therefore, no take of snowy plover adults, chicks, or eggs is authorized. This project does not occur within designated critical habitat for western snowy plover; therefore none will be impacted.

Effect of the Take

The Service has determined that this level of anticipated take is not likely to result in jeopardy to the listed wildlife species in this opinion or result in destruction or adverse modification of critical habitat.

Reasonable and Prudent Measures

The Sacramento Fish and Wildlife Office (SFWO) believes the following reasonable and prudent measure is necessary and appropriate to minimize incidental take of the western snowy plover:

> The potential for harassment, harm, injury and mortality to the western snowy plover must be minimized.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of ESA, the Corps must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are nondiscretionary.

1. The Corps shall assure that a monitoring plan of habitat change is developed and approved by the Service and implemented prior to construction of the Downtown Guadalupe River Project.

2. The Corps shall assure that levees around salt ponds A8W, A8D, A7, A6, A10, A11, and A12 are inspected for weakness during flood conditions.

3. If the previously mentioned levees show any sign of weakness or fail, the Corps shall take immediate remedial measures, in consultation with the Service.

4. Any installation of pumps to salt ponds A8W or A8D shall occur outside the sensitive period for western snowy plovers of March 1 through September 30.

The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize the impact of incidental take on a species that might result from the proposed action. The Service believes that no (0) adults, chicks, or eggs of western snowy plovers will be incidentally taken. If, during the course of the action, this level of incidental take is exceeded, such incidental take would represent new information requiring review of the reasonable and prudent measures provided. The Federal agency must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

Reporting Requirements

The SFWO is to be notified within three working days of the finding of any dead listed wildlife species or any unanticipated harm to the species addressed in this biological opinion. The Service contact person for this is Karen J. Miller, Chief, Endangered Species Division at (916) 414-6620.

The Corps must provide the Service with annual reports to describe the progress of implementation of all the commitments in the Conservation Measures and Terms and Conditions sections of this biological opinion. The first report is due by the end of the second calendar year following initiation of project construction.

The Corps must require the city of San Jose to report to the Service immediately any information about take or suspected take of listed wildlife species not authorized in this opinion. The Corps must notify the Service within 24 hours of receiving such information. Notification must include the date, time, and location of the incident of the incident or of the finding of a dead or injured animal. The Service contact person is Cay C. Goude, Assistant Field Supervisor for Endangered Species and Environmental Contaminants, at (916) 414-6700.

Any contractor or employee who during routine operations and maintenance activities inadvertently kills or injures a listed wildlife species must immediately report the incident to their representative. This representative must contact the California Department of Fish and Game immediately in the case of a dead or injured western snowy plover. The California Department of Fish and Game contact for immediate assistance is State Dispatch at (916) 445-0045.

The U.S. Fish and Wildlife Service Regional Office in Portland, Oregon, must be notified immediately if any dead or sick listed wildlife species is found in or adjacent to pesticide-treated areas. Cause of death or illness, if known, also should be conveyed to this office. The appropriate contact is Richard Hill at (503) 231-6241.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of ESA directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities that can be implemented to further the purposes of the Act, such as preservation of endangered species habitat, implementation of recovery actions, or development of information and data bases.

1. To assure the long-term viability of snowy plover populations, their breeding habitat should be monitored and managed in a systematic, ongoing fashion to measure progress towards recovery and identify management and protection efforts that are needed. Land managers should recognize that components of breeding habitat include: areas where plovers prospect for nesting sites, make scrapes, lay eggs, feed, rest, and rear broods. Breeding habitat also includes travel corridors between nesting, resting, brood-rearing, and foraging areas.

    a. The number of breeding adults should be recorded on an annual basis.

    b. Productivity, expressed as young fledged per male, should be recorded annually to minimize the banding of birds.

    c. Annual survival rates of adults should be recorded annually.

All of the above data should be reported to the SFWO.

2. Future projects should avoid development that will destroy or degrade western snowy plover breeding/foraging habitat.

    a. Construction of rock jetties should be avoided when it would result in eroded beaches and sandspits. Inlet stabilization and breaches of beach or dune habitat should also be discouraged if these actions would interfere with natural inlet formation, closure, and migration processes which maintain availability of plover habitat.

    b. Sand removal and dredging should be avoided when they would alter the natural patterns of erosion and deposition of coastal dunes. Water diversion and impoundment of creeks and rivers should be avoided when they would reduce sand delivery to beaches or

interfere with maintenance of open habitat at river and creek mouths.

c. Coastal ponds and playas, including salt ponds, should be enhanced and created to improve breeding habitat. Significant opportunities for management of nesting plovers currently exist within San Francisco Bay salt ponds. However, salt ponds should only be created or enhanced at existing salt pond habitat; they should not be used for mitigation or compensation of coastal beach-dune or other snowy plover habitats.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

REINITIATION--CLOSING STATEMENT

This concludes formal consultation on the action(s) outlined in the (request or reinitiation request). As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals that the agency action may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

Please contact Ken Sanchez of this office at (916) 414-6625, if you have any questions. If you have any questions regarding wetlands, contact Mark Littlefield at (916) 414-6580.

Sincerely,

Karen J Miller

Cay C. Goude
Acting Field Supervisor

Enclosures

cc: NMFS, Santa Rosa, CA
EPA-Region IX, San Francisco, CA
CDFG, Region III, Yountville, CA
Santa Clara Valley Water District, Sunnyvale, CA

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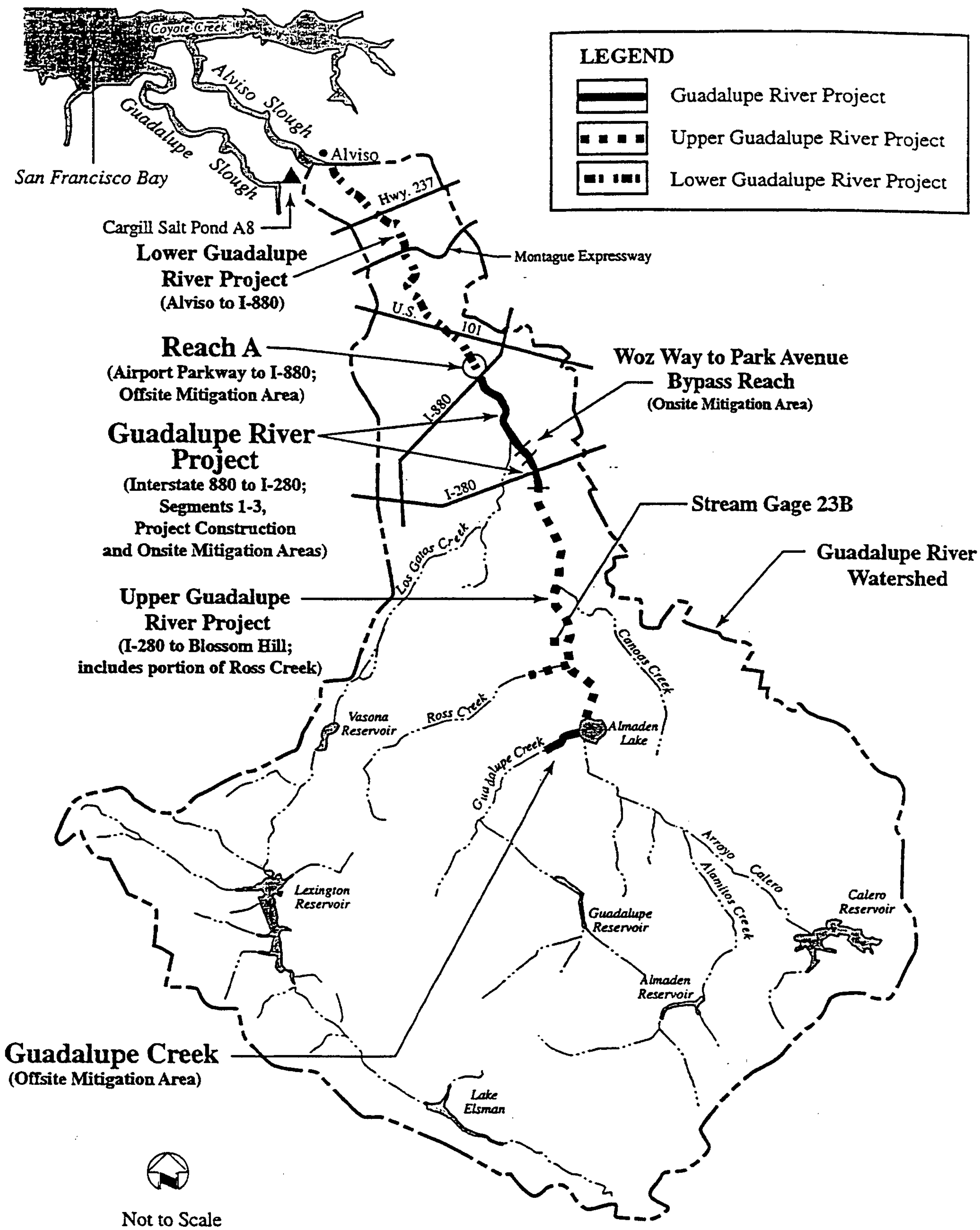
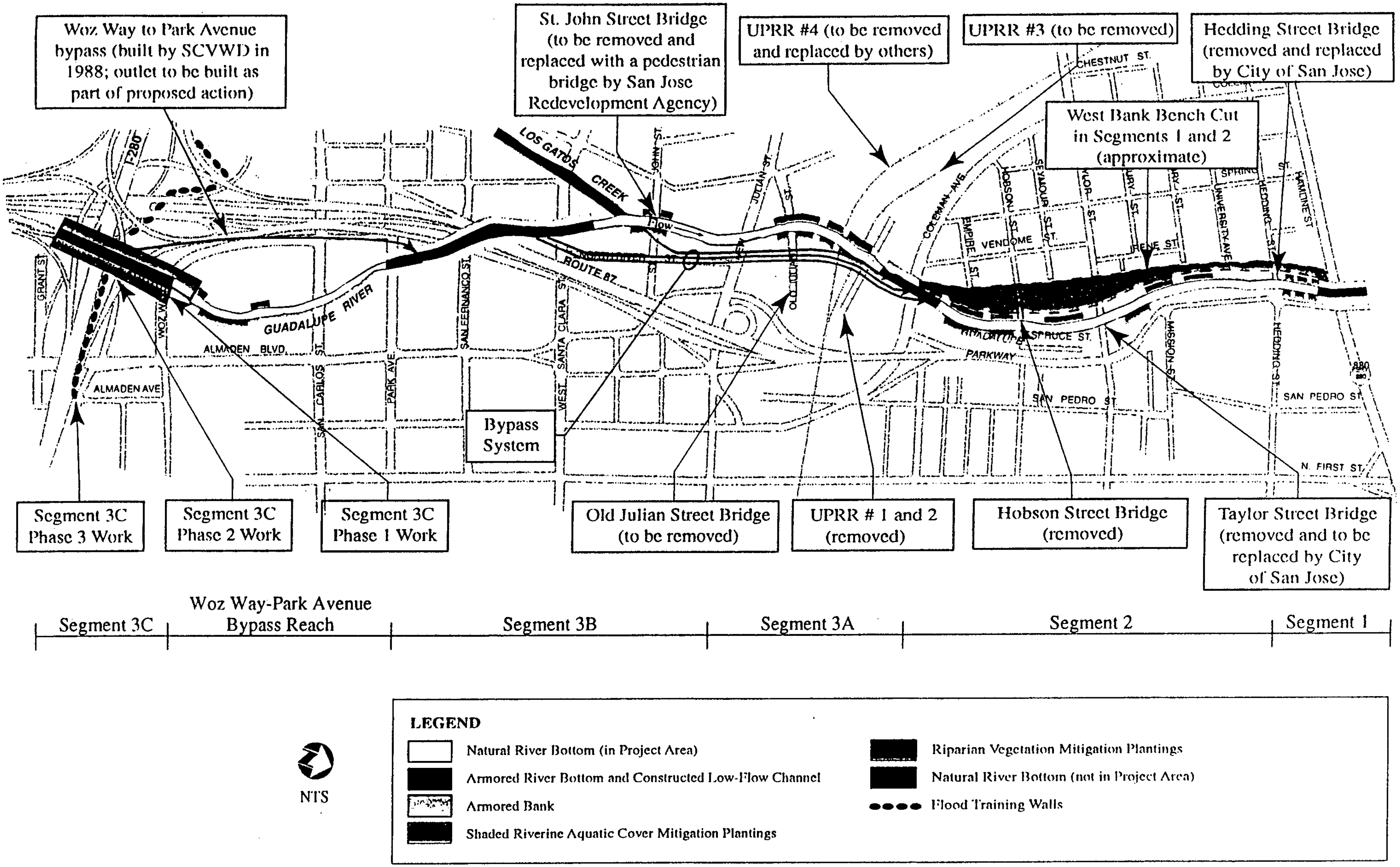


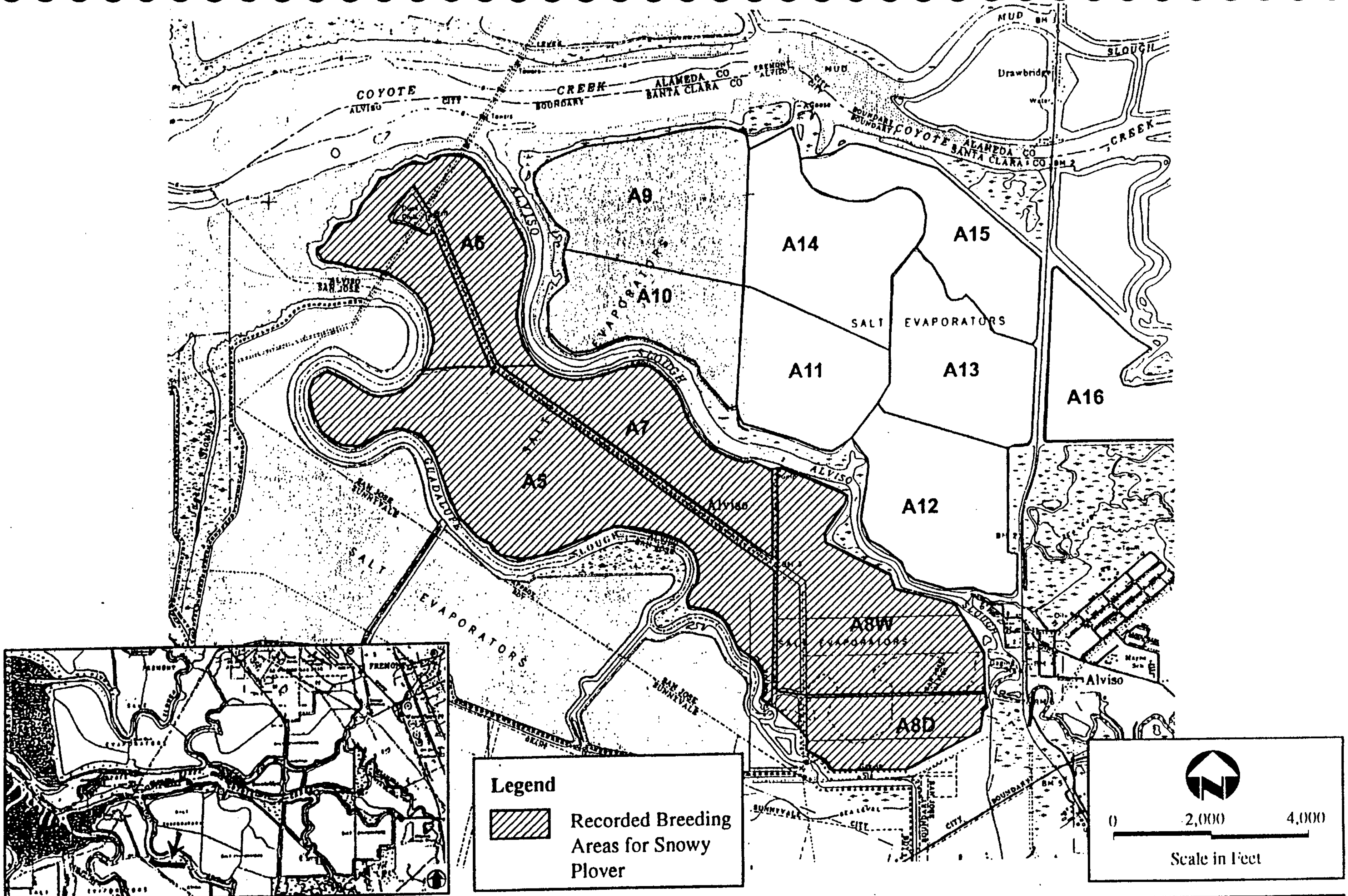
Figure 1 Guadalupe River Watershed Including Project Construction and Mitigation Areas



Jones & Stokes

Figure 2
Guadalupe River Project with Proposed Action Flood Protection and Onsite Mitigation Components

USFWS BDR 1/14/00



Jones & Stokes

Figure 3

Recorded Breeding Areas for Western Snowy Plover - Lower Guadalupe River/Alviso Slough Area

USFWS BDR 1/14/00

Solbert

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213

AUG 11 2000 F/SWR4: MH

Mr. Mark Capik
Acting Chief, Planning Division
U. S. Army Corps of Engineers
Sacramento District
1325 J Street
Sacramento, California 95814

Dear Mr. Capik:

This document transmits the National Marine Fisheries Service's (NMFS) Biological Opinion on the proposed Guadalupe River Flood Control Project ("Downtown Project") located in the City of San Jose, Santa Clara County, California, and addresses project effects on the threatened Central California Coast evolutionarily significant unit (ESU) of steelhead (*Oncorhynchus mykiss*) and its critical habitat in accordance with section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.). This document also transmits NMFS' tentative essential fish habitat (EFH) Conservation Recommendations for chinook salmon (*Oncorhynchus tshawytscha*) as required by section 305 (b)(4)(A) of the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) as amended (16 U.S.C. 1801 et seq.). While EFH designations for chinook salmon have yet to be approved by the Secretary of Commerce, we expect them to be forthcoming and provide these recommendations to facilitate your consultation obligations.

The Biological Opinion and EFH Conservation Recommendations are based on information provided in the Biological Data Report (February 2000) and Draft General Re-evaluation and Environmental Report for Proposed Project Modifications, Volume 1 (June 2000). The Opinion and Recommendations also reflect NMFS' participation in routinely scheduled meetings with project staff and resource agency representatives regarding the development of construction designs and mitigation options (i.e., Guadalupe River Flood Control Project Collaborative) and a review of the ecological literature on steelhead and chinook salmon. A complete administrative record of this consultation is on file in the NMFS Santa Rosa office.

Please note that because of the common habitat requirements for steelhead and chinook salmon, NMFS has chosen to include four of the five Reasonable and Prudent Measures with their respective Terms and Conditions listed in the Incidental Take Statement of the Biological Opinion as its tentative EFH Conservation Recommendations for chinook salmon. Once the EFH designations for chinook salmon are approved, the Corps has a statutory requirement subject to section 305(b)(4)(B) of the MSFCMA and 50 CFR 600.920(j) under the EFH regulations to submit in writing within 30 days to NMFS a detailed description of measures proposed for avoiding, mitigating, or offsetting the impact of the activity on EFH. If the Corps is unable to complete a final response within 30 days of final approval, they should provide NMFS an interim written response within 30 days.

If you have any questions concerning this Biological Opinion or EFH Recommendations, please contact Mr. Mark Helvey at (562) 980-4046.

Sincerely,

for

Rodney R. McInnis
Acting Regional Administrator

Enclosure

Guadalupe River Flood Control Project

BIOLOGICAL OPINION
(Endangered Species Act -Section 7 Consultation)

and

ESSENTIAL FISH HABITAT CONSERVATION RECOMMENDATIONS
(Magnuson-Stevens Fishery Conservation and Management Act - EFH Consultation)

Endangered Species Act -Section 7 Consultation

BIOLOGICAL OPINION

Agencies: U.S. Army Corps of Engineers.

Activity: Flood Control Project for the Guadalupe River, Downtown San Jose, California

Consultation Conducted By: National Marine Fisheries Service, Southwest Region.

Date Issued: AUG 11 2000.

I. INTRODUCTION

The Downtown Guadalupe River Flood Control Project is proposed to provide flood protection along less than a three mile portion of the Guadalupe River within the City of San Jose, California, between Grant Street and Interstate 880 (Figure 1). The U. S. Army Corps of Engineers, Sacramento District (Corps) is the federal agency and the Santa Clara Valley Water District (SCVWD), City of San Jose, and San Jose Redevelopment Agency are the non-federal sponsors. The project requires a Clean Water Act Section 404 permit.

The project is being implemented in six stages with three of these stages already completed (Figure 2). The first two construction stages, Contracts 1 and 2, were completed in 1994 and 1996, respectively. A third stage, Contract 3C Phase 1, was finished in 1999. The fourth stage, Contract 3C, Phase 2 will begin in 2001. The fifth stage includes the work in Contracts 3A and 3B and also the construction of an underground bypass to convey flood flows between West Santa Clara Street and Coleman Avenue in downtown San Jose. Contracts 3A and 3B will be completed in 2002. The sixth stage includes Contract 3C Phase 3 which will also be completed in 2002. Mitigation for the project has occurred or will occur onsite in the areas of Contracts 1, 2, and 3 and offsite in Reach A and lower Guadalupe Creek.

Because the federally threatened Central California Coast evolutionarily significant unit (ESU) of steelhead (*Oncorhynchus mykiss*) occurs in the project area, the Corps, pursuant to the Endangered Species Act (ESA), 16 U. S. C. § 1531 et. seq., requested formal Section 7 consultation on the fourth, fifth and sixth stages in a letter dated February 8, 2000 to the National Marine Fisheries Service (NMFS). NMFS initiated its Section 7 consultation at that time, as the formal request was accompanied by a completed biological assessment. Project action is defined as construction in Contracts 3A and 3B, Contract 3C, Phase 2, Contract 3C, Phase 3 and the operational effects of the entire Guadalupe River Project (effects of water flow through the flood bypasses and the flow of water through Contracts 1, 2, 3A, 3B, and 3C reaches.

This biological opinion is based on the written descriptions of the flood control project (U.S. Army Corps of Engineers and Jones & Stokes Associates 1999, U. S. Army Corps of Engineers 2000, U. S. Army Corps of Engineers and Santa Clara Valley Water District (SCVWD) 2000), participation in ongoing monthly meetings with project staff and resource agency

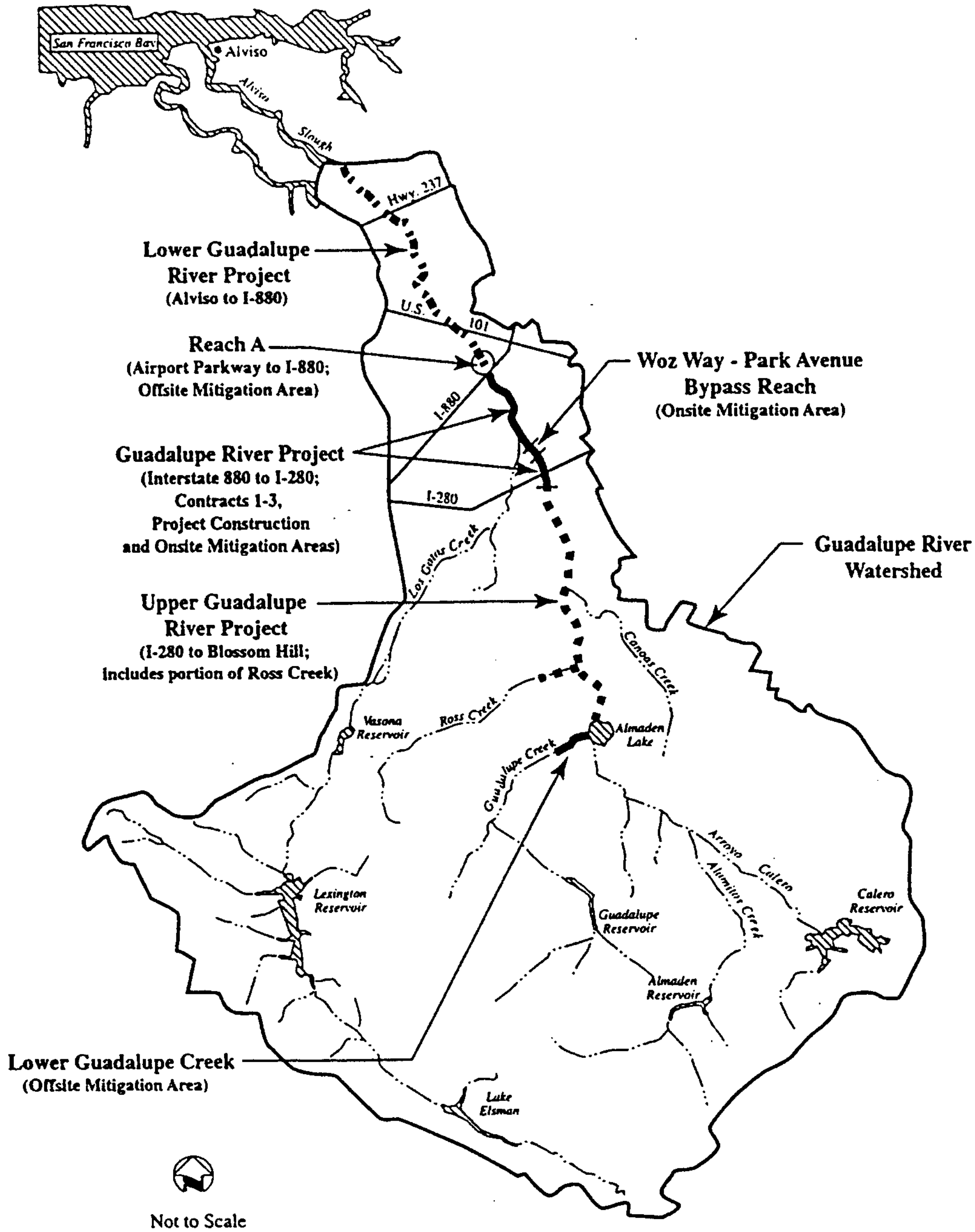


Figure 1. Map of the Guadalupe River watershed. The Guadalupe River Project or "Downtown Project" is indicated by the solid dark line.

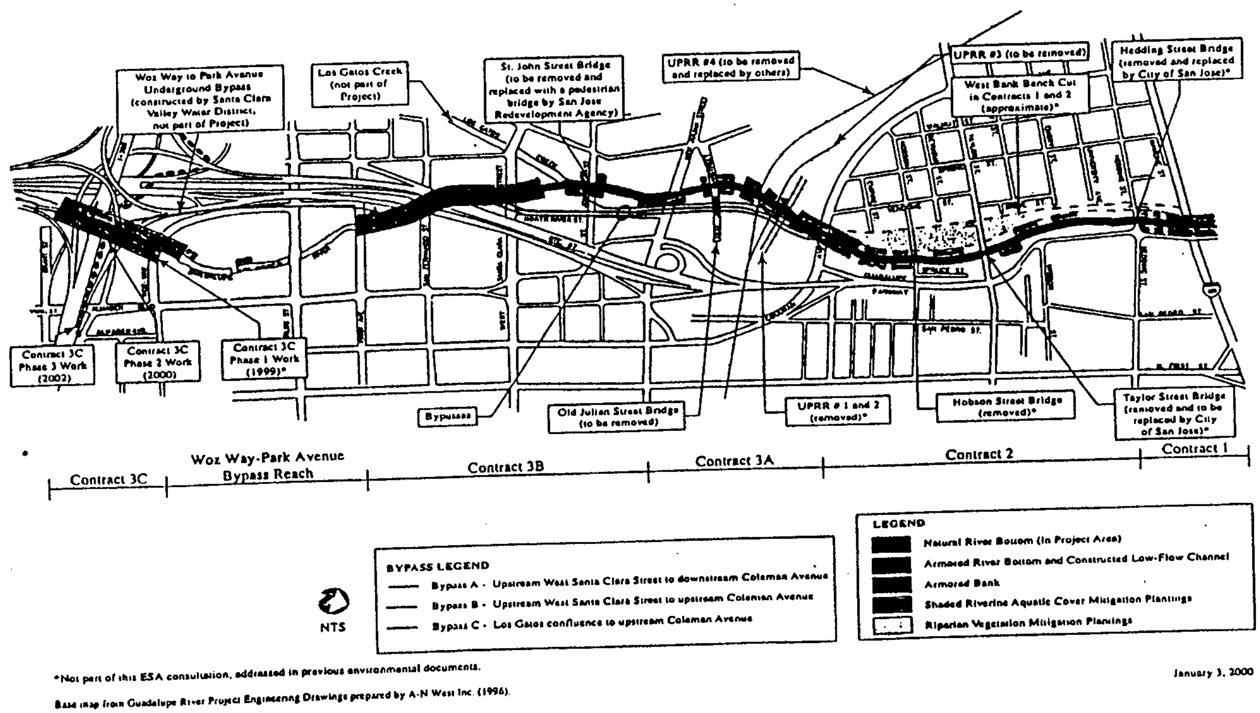


Figure 2. Guadalupe River Project with the proposed action. Flood protection and onsite mitigation components are shown.

representatives on the development of construction designs and mitigation options (i.e., Guadalupe River Flood Control Project Collaborative) and a review of the ecological literature on steelhead.

The Administrative Record for this consultation is maintained at the NMFS Santa Rosa office, 777 Sonoma Ave., Room 325, Santa Rosa, California, 95404.

II. PROPOSED ACTION

The Guadalupe River basin is located in Santa Clara County at the south end of San Francisco Bay. The Guadalupe River drains a 160 square mile area in the Santa Cruz Mountains and suburban San Jose, flowing north from the confluence of Alamitos and Guadalupe Creeks through the City of San Jose, California, before emptying into south San Francisco Bay. The river currently cannot contain the 100-year flood event (17,000 cubic feet per second [cfs], per. comm. N. Bicknese, U. S. Army Corps of Engineers, April 2000) resulting in repeated flooding of the San Jose community over the years, most recently in 1995. To control future flooding, channel modifications are proposed along three sections or reaches[1] of the river. The Federal action involves Federal authorization through Section 404 of the Clean Water Act and cost-sharing with the SCVWD, the Corp's partner sponsor for the flood control project. The SCVWD would use the cost-sharing funds to modify a segment of the Guadalupe River between Grant Street and I-880 within San Jose for increasing the capacity of the Guadalupe River to contain the 100-year flood event, and for reimbursement of costs associated with project mitigation sites along Guadalupe Creek and Reach A of the river.

The project action occurs along a 2.6 mile section of the Guadalupe River between Grant Street, just upstream of I-280, and I-880 in downtown San Jose. The project area supports a narrow, discontinuous corridor of riparian forest habitat and shaded riverine aquatic (SRA) cover along the river bank. Moving from upstream to downstream, the project is divided into three reaches identified as Contracts 3C, 3B, 3A, 2 and 1 (Figure 2).

Contract 3C is located at the upstream end of the project between Woz Way and Grant Street and is separated from the downstream Contract 3A and 3B reaches by the Woz Way-Park Avenue Bypass Reach that was completed by the SCVWD in 1988 and has not been operational as neither an inlet nor outlet were constructed. Contract 3C is further subdivided into three subreaches: Phases 1, 2 and 3. However, only Phases 2 and 3 are part of the proposed action. The Corps and SCVWD previously consulted with NMFS on the construction of 3C Phase 1 in 1999.

Contract 3C-Phase 2 subreach includes 1,250 feet (ft) of proposed bank armoring from downstream of Woz Way to Grant Street on the west bank. The armoring includes gabions at the toe of the slope and stone terraces on the bank. On this bank, the inlet section to the existing 2,500 ft Woz Way-Park Avenue bypass will be constructed. (A concrete weir will be constructed at the inlet to control flows entering the bypass and a bulkhead retaining wall will be constructed at the entrance to the bypass to divert water from the bypass until the Project is operational). On the east bank, 1,085 linear feet (lf) of the reach will be armored with gabions at the toe of the slope and stone terraces on the river bank. The river bottom will be armored

[1] Reaches are convenient subdivisions of the river corresponding to major bridge crossings.

with concrete cellular mattresses (CCM) and concrete for 1,045 lf. Within the armored river bottom, a low-flow channel will be constructed to provide for fish passage at low flows. The constructed low-flow channel in 3C phase 2 will have a trapezoid/boulder design. Construction of the 3C phase 2 subreach is scheduled to begin in summer 2001 and end in early 2002.

The Contract 3C Phase 3 subreach includes construction of flood training walls in the uplands adjacent to the reach. These training walls would direct overbank flood flows into the river channel. These walls will be located on both the east and west sides of the river. On the east bank of the river, 860 lf of wall will be constructed and the west bank will have 1,593 lf of floodwalls. Construction of this subreach is scheduled for 2002.

For phases 2 and 3 of the Contract 3C reach, all 1.9 acres of the existing riparian vegetation will be lost, 773 lf of the existing 919 lf of SRA cover will be lost and all 200 ft^2 of the existing spawning gravel habitat will be lost.

Contract 3B reach is the center reach of the project and is located between New Julian Street and Park Avenue. Contract 3B reach construction includes approximately 1,861 lf of west river bank armoring, 2,231 lf of east bank armoring, and 1,940 lf of river bottom armoring. Bank armoring will include gabions at the toe of the slope and stone terraces on the slope and a vertical concrete retaining wall. The river bottom will be armored with CCM and include a low-flow channel to provide fish passage. The low-flow channel will include approximately 5-7 concrete check structures to pool water, as well as logs, boulders, and gravel placed on top of the CCM to concentrate flows in the low-flow channel. An existing gaging weir currently blocking fish passage will be removed and replaced with an invert stabilization structure. The St. John Street bridge may be demolished to maintain the necessary hydraulic capacity but would be replaced with a pedestrian/maintenance bridge. Contract 3B will include the construction of the outlet section of the Woz Way - Park Ave. bypass at the upstream portion of this reach. Inlets to the proposed bypass system (Santa Clara Street-Coleman Avenue bypass) will be constructed in the downstream portion of this reach.

Construction of Contract 3B will result in the loss of 3.4 acres of the existing 6 acres of riparian vegetation, the loss of 2,430 lf of the existing 3,838 lf of SRA cover and all 9,700 ft^2 of spawning gravel habitat. Construction of Contract 3B is scheduled for 2001 - 2002, concurrent with the construction of Contract 3A.

Contract 3A, the furthest downstream reach, is located between Coleman Avenue and New Julian Street. Approximately 695 lf of the west river bank will be armored, 745 lf of the east river bank will be armored, and 695 lf of river bottom armoring will be installed at the downstream end of the reach. Gabions will armor the toe of the slope, stone terrace will armor the river bank and CCM will armor the river bottom. A low-flow channel will be created in the CCM using approximately 5-7 concrete sills, logs, boulders and gravel placed at grade and on top of the CCM-armored river bottom to concentrate flows in the low-flow channel. The Old Julian Street bridge will be removed and two railroad bridges will be replaced by a single railroad bridge. An exposed gas and sewer line that may act as a barrier to fish at low flows will be relocated under the river. Outlets for the Santa Clara Street-Coleman Avenue bypass system will be constructed in the downstream section of this reach near Coleman Avenue.

Construction of Contract 3A will result in the loss of 2.3 acres of the existing 4.5 acres of riparian vegetation, the loss of 1,430 lf of the existing 3,062 lf of SRA cover and all 10,600 ft^2 of

spawning gravel habitat in Contract 3A. Construction of this reach is scheduled at the same time as Contract 3B in 2001 - 2002 concurrent with the construction of 3B.

To fully compensate for all habitat impacts resulting from project construction, a Mitigation and Monitoring Plan or MMP (U. S. Army Corps of Engineers and Santa Clara Valley Water District 2000) has been prepared by the project sponsors to address these impacts. The components of the plan have been endorsed and ratified by all members of the Guadalupe River Flood Control Project Collaborative, including the U. S. Fish and Wildlife Service, NMFS and California Department of Fish and Game (Guadalupe Collaborative 1999). The Collaborative members have committed to implementation of the MMP to restore and compensate for adverse environmental effect of the project (Guadalupe Collaborative 1999). The MMP provides a framework to verify that mitigation will be adequate and successful for ensuring that the project causes no harm to environmental resources, that mitigation fulfills requirements spelled out in project permits and authorizing documents, that mitigation complies with governing laws and that adaptive management methods (based on measures that track key ecological functions and habitat values) are supervised by an Adaptive Management Team (comprised of Collaborative members) and implemented as needed to ensure that established ecological functions and habitat values are met. The MMP identifies and describes project actions that will ensure the protection or restoration of existing habitat structure and function present in the project area. Five key habitat structure and function elements have been identified: riparian vegetation, shaded riverine aquatic cover vegetation (SRA cover) and their effect on water temperatures, steelhead spawning habitat, steelhead fish passage, and steelhead rearing habitat.

To address projected impacts to 7.6 acres of riparian vegetation and 4,634 lf of SRA cover, the MMP describes the completion of 21 acres of riparian vegetation plantings native to the Guadalupe River in Contracts 1 and 2 (just downstream of the Contract 3 reach) between 1994 and 1999. These plantings were undertaken to compensate for 6.4 acres of riparian habitat impacted in other segments of the river between 1992 and1994 and in anticipation of the projected impacts for this project. To compensate for SRA cover impacts, SRA cover mitigation plantings will occur both onsite and offsite. Onsite SRA cover mitigation includes the planting of 3,000 lf both within the project area (1,344 lf in the Contract 3C and 3A reaches and the remaining amount in Contract 1 and 2 reaches immediately downstream of the Contract 3A reach). Plant material will be placed in areas disturbed during construction as well as in areas currently void of SRA cover vegetation to fill the existing gaps in the riparian canopy.

Offsite SRA cover mitigation includes planting 7,848 lf of SRA cover vegetation in Reach A (Figure 1) and 12,044 lf in lower Guadalupe Creek (Figure 1), a tributary to the Guadalupe River located approximately 6 miles upstream of the project area. Onsite SRA cover mitigation plantings in Contracts 1, 2, and the Woz Way Park reach as well as offsite SRA mitigation plantings are expected to be completed by 2001. Onsite SRA plantings in Contracts 3A and 3B are expected to be completed by 2002. SRA plantings will start providing shade before year 5 of planting and reach maturity and maximum shade density after year 40. Shade provided by the SRA cover plantings is anticipated to cool Guadalupe River water temperatures. Should water temperature measurements indicate harmful temperatures to steelhead onsite, the adaptive management strategy of the MMP allows for implementing pro-active procedures including the placement of boxed trees along the constructed low-flow channel in Contracts 2, 3A, and 3B from approximately June through October until mitigation plantings begin providing enough shade to lower water temperatures below harmful levels to steelhead. Shade cloth may

be used in place of boxed trees if it is found that the use of boxed trees is not feasible. Planting faster growing trees in SRA mitigation sites and removing these once mitigation planted trees begin providing shade may also be performed (U. S. Army Corps of Engineers and Santa Clara Valley Water District 2000).

The project may affect up to an estimated existing 20,500 ft^2 of potential spawning gravels, (i.e., 200 ft^2, 9,700 ft^2 and 10,600 ft^2 in reaches Contract 3C Phase 2, 3B and 3A, respectively). If project activities do result in the loss of spawning gravels, river-run gravels will be placed in both the natural and armored channel invert sections of Contract 3A and 3B reaches after construction as well as in the Contract 1 and 2 reaches. Sufficient gravel deposits will be made to insure a minimum 1 foot thickness at appropriate spawning habitat locations whenever gravel coverage drops below 80 percent of the pre-project levels based on preconstruction surveys. Restocking will take place between June 15 and August 31. Gradient-control structures (or invert stabilization structures) will also be placed in the natural bottom sections of the river in Contracts 3A and 3B to promote gravel deposition.

A low-flow channel will be included in the armored sections of the river bottom to provide fish passage through the project area. In each of the armored river-bottom sections of Contract 3A and 3B reaches, a low-flow channel will be created using approximately 5-7 concrete sills (or check structures) as well as logs, boulders, and gravel placed at grade on top of the CCM-armored bottom to concentrate flows in the low-flow channel. The design will maintain minimum average low-flow water depth required for migrating adult steelhead. The low-flow channel check structures will also provide pools of water 1.2 feet deep at extremely low flows (1 cfs) and thereby maintain cooler downstream water temperatures.

In the Contract 3C reach, a trapezoid/boulder low-flow channel will be constructed into the armoring that protects approximately 1,045 lf of river bottom. The design includes the placement of clusters of boulders in the trapezoidal shaped, low-flow channel to increase waters depth, provide low-flow passage for steelhead and provide fish habitat.

Invert stabilization structures proposed for the natural river bottom sections of the Contract 3A and 3B reaches are expected to promote the development of plunge pools and gravel bar sequences in these reaches of the river. Geomorphic instream features installed as part of the SRA mitigation plantings will improve bank stability, increase instream cover and improve the suitability of spawning and rearing habitat for steelhead. Geomorphic features may include rock weirs and vanes, boulders, root wads, and deflector logs.

The Corps will implement preventative measures to avoid and minimize potential adverse effects on riparian vegetation (including SRA cover) and other fish resources that could occur during project construction. These preventative measures include: 1) implementing a Vegetation Protection Plan using best management practices for protecting and replacing vegetation damaged during construction; 2) implementing a Storm Water Pollution Prevention Plan (SWPP) that complies with the statewide General Permit administered by the California State Water Resources Control Board for the National Pollutant Discharge Elimination System; 3) implementing an Erosion and Sediment Control Plan for minimizing the potential for sediment input into the stream; 4) implementing a Toxic Material Control and Spill Response Plan for preventing toxic material spills; 5) implementing a Soil Management Plan that provides criteria for classifying wastes in soil and managing soils possibly contaminated with mercury and methyl mercury concentrations; 6) implementing a Hazardous and Toxic Materials Contingency

Plan that outlines a course of action in the event that unlisted hazardous and toxic sites are uncovered during construction; and, 7) implementing construction area-fish management constraints pertaining to diversion of flows and the removal of fish from impacted areas; and 6) limiting in-river construction to the May 1 - October 15 timeframe assuming that stream-monitoring criteria have been met for water temperatures and absence of out-migrating steelhead. In the event that stranded juvenile steelhead are found in pools remaining in the affected river segment after the flow is diverted, fish will be captured by a qualified fisheries biologist using a backpack electroshocker and relocated.

III. LISTED SPECIES AND ENVIRONMENTAL BASELINE

Central California Coast steelhead are likely to be adversely affected by the project action due to riparian and instream habitat impacts, including temporary loss of spawning and rearing habitat, potential changes in water temperature, sedimentation and turbidity effects, bypass channel entrapment and migration diversion, and interruptions to functioning instream habitat. These impacts would occur along a 2.6 mile section of the Guadalupe River between Grant Street (just upstream of I-280) and I-880 in downtown San Jose, California. Sedimentation and turbidity effects mays also occur immediately downstream of the project construction area. On August 18, 1997, NMFS published a final rule listing the Central California Coast Steelhead ESU as threatened under the ESA (62 FR 43937). Consequently, the status of the species, its life history and habitat requirements, and recent factors affecting its population (i.e., environmental baseline) are described below. Critical habitat for this ESU was designated on February 16, 2000 (65 FR 7764).

STATUS

The abundance of steelhead in the Central California Coast ESU was summarized by Busby et al. (1996). The authors commented that steelhead populations within the major streams occupied by this ESU appear to be greatly reduced from historical levels. Steelhead in most tributaries to San Francisco and San Pablo Bays have been virtually extirpated (McEwan and Jackson 1996). In a 1994 to 1997 survey of 30 San Francisco Bay watersheds, steelhead occurred in small numbers at 41 percent of the sites, including the Guadalupe River, San Lorenzo Creek, Corte Madera Creek, and Walnut Creek (Leidy 1997).

Little information is available regarding the contribution of hatchery fish to natural spawning, and little information on present run sizes or trends for this ESU exists. However, given the substantial rates of declines for stocks where data do exist, the majority of natural production in this ESU is likely not self-sustaining.

Critical Habitat: Central California Coast steelhead critical habitat is designated to include all river reaches and estuarine areas accessible to listed steelhead in coastal river basins from the Russian River to Aptos Creek, California (inclusive), and the drainages of San Francisco and San Pablo Bays. Excluded is the Sacramento-San Joaquin River Basin of the California Central Valley as well as areas above specific dams including Almaden Reservoir, Calero Reservoir, Guadalupe Reservoir and Vasona Reservoir.

LIFE HISTORY AND HABITAT REQUIREMENTS

The timing of upstream migration is correlated with higher flow events, such as freshets or sand bar breaches, and associated lower water temperatures. Unusual stream temperatures during spawning migration periods can alter or delay migration timing, and increase fish susceptibility to diseases. The minimum stream depth necessary for successful upstream migration is 7.2 inches (Thompson 1972). Reiser and Bjornn (1979) indicated that steelhead preferred a depth of 9.5 inches or more.

Steelhead spawn in cool, clear streams featuring suitable gravel size, depth, and current velocity. Intermittent streams may be used for spawning (Barnhart 1986; Everest 1973). Fry typically emerge from the gravel two to three weeks after hatching (Barnhart 1986). After emergence, steelhead fry usually inhabit shallow water along perennial stream banks. Older fry establish territories which they defend. Streamside vegetation and cover are essential for their survival and removal of this vegetation and cover can be considered an adverse impact.

Steelhead juveniles are usually associated with the bottom of the stream. In smaller California streams, the water levels may drop so low during the summer that pools are the only viable rearing habitat. No passage between pools can occur until river levels rise with the onset of the rainy season. Therefore, juvenile steelhead rearing in isolated summer pools are extremely vulnerable to disturbance or water quality impacts. Daytime temperatures in summer rearing pools may also be near lethal levels; riparian shading and the presence of sub-surface, cold water seeps are often essential to maintain pool temperatures at tolerable levels. In winter, steelhead juveniles become inactive and hide in any available cover, including gravel or submerged woody debris.

The majority of steelhead in their first year of life occupy riffles when there is adequate water, although some larger fish inhabit pools or deeper runs. Juvenile steelhead feed on a wide variety of aquatic and terrestrial insects, and emerging fry are sometimes preyed upon by older juveniles. Water temperatures influence the growth rate, population density, swimming ability, ability to capture and metabolize food, and ability to withstand disease of these rearing juveniles. Rearing steelhead juveniles prefer water temperatures of 45° to 58° F and have an upper lethal limit of 77° F (Raleigh et al. 1984).

Suspended and deposited fine sediments can directly affect rearing salmonids by abrading and clogging gills, and indirectly cause reduced feeding, avoidance reactions, destruction of food supplies, reduced egg and larval survival, and changed rearing habitat (Reiser and Bjornn 1979).

Juvenile steelhead live in freshwater between one and four years (usually one to two years in the Pacific Southwest) and then become smolts and migrate to the sea from November through May with peaks in March, April, and May. Fish size appears to be positively correlated with water velocity and depth with larger fish occurring in faster and deeper areas of the channel (Chapman and Bjornn 1969, Everest and Chapman 1972).

Further information is available in the NMFS Status Review of west coast steelhead from Washington, Idaho Oregon, and California (Busby et al. 1996), the NMFS Status Review for Klamath Mountains Province Steelhead (Busby et al. 1994), and the NMFS final rule listing the

Southern California Coast steelhead ESU, South Central California Coast steelhead ESU, and the Central California Coast steelhead ESU (NMFS 1997).

ENVIRONMENTAL BASELINE

The action area for this project will occur along a 2.6 mile section of the Guadalupe River between Grant Street (just upstream of I-280) and I-880 in downtown San Jose, California. Sedimentation and turbidity effects may also occur immediately downstream of the action area.

Documentation of steelhead in the Guadalupe River is limited although steelhead abundance is believed to be substantially less than that of historical conditions primarily because of the construction of barriers to fish passage (U. S. Army Corps of Engineers and Santa Clara Valley Water District 2000). From a historical perspective, Skinner (1962) noted that the Guadalupe River system probably supported small runs of steelhead and accounts of their occurrence in the river have been documented (Leidy 1984). Adults would have entered the river from south San Francisco Bay in early winter and migrated upstream into cooler tributaries (e.g., Guadalupe Creek) to spawn. After the completion of upstream reservoirs in the 1930s and 1950s, steelhead migration was restricted to tributary streams downstream of the reservoir dams (Montgomery Watson et al. 2000). Prior to the construction of a fish ladder in fall,1999, at the Alamitos drop structure[2], located at the confluence of Guadalupe and Alamitos Creeks (the downstream end of Almaden Lake), steelhead entering the Guadalupe River system had been prevented from migrating to historic upstream spawning and rearing areas (U. S. Army Corps of Engineers 2000). Despite these threats and impacts in this urban setting, steelhead have been able to persist in low numbers and have been recorded in the Guadalupe River at least since 1986 (Ulmer 1988 as reported in U.S. Fish and Wildlife Service 1998).

Observations of adult steelhead in the Guadalupe River suggests that they enter the river to spawn. Whether the adults actually use the river for spawning purposes cannot be confirmed because water clarity is poor during the steelhead spawning season in Santa Clara Valley watersheds and sightings of actual steelhead redds have not been made (pers. comm., T. Neudorf, SCVWD, 25 May 2000). However, steelhead smolts have been captured in outmigrant trapping operations conducted between 1997 and 1999 (pers. comm., T. Neudorf, SCVWD, 25 May 2000). The presence of juvenile steelhead (or rainbow trout) indicates the project area is used for rearing purposes.

Adverse impacts to steelhead in the Guadalupe River system are consistent with the primary reasons for the decline in steelhead abundance throughout California. These declines have resulted from the destruction and modification of habitat, overfishing, and natural and human-made factors (National Marine Fisheries Service 1996, 1997). Specifically for the Guadalupe River, logging, followed by the construction of numerous barriers, impoundments, diversions, pollution from the fruit canning industry and other urban runoff, gravel mining, and the introduction of non-native fish species (e.g., largemouth bass, sunfishes, carp) have greatly reduced the habitat quality of the Guadalupe River (U.S. Fish and Wildlife Service 1998). Based on NMFS' observations, factors adversely affecting steelhead occurring in the project

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[2]This structure was an impassable barrier to steelhead migration until October 1999 when construction of a fish ladder was completed. The operation of this ladder at the downstream end of Almaden Lake now provides fish access to another 2.9 miles of upstream habitat along Guadalupe Creek (J. Ferguson, SCVWD, pers. comm.).

area of the Guadalupe River appear to be consistently related to the alteration or modification of instream habitat, barriers to fish passage, urbanization, and questionable water quality. Modification of instream habitat can reduce the availability of spawning and rearing habitat and also increase water temperatures when SRA cover habitat is reduced. Fish passage barriers reduce available habitat for spawning and rearing purposes in upper reaches of the Guadalupe River and its tributaries. Poor water quality (e.g., water temperature) can affect steelhead survival and that of their prey.

Immediately upstream and downstream of the project area are 6.4 miles of channel proposed to be modified in another flood control project (Upper Guadalupe Flood Control Project) previously reviewed by NMFS under Section 7 of the ESA. Modifications include main channel excavation including the creation of wider channels and bench cuts, bank stabilization, bridge construction, floodwall and levee construction, and revegetation. These modifications are proposed to take place over a 25 year time frame and may affect steelhead downstream by sedimentation and turbidity release although these releases are expected to be minimal due to the summertime, low-flow condition, construction window.

Concerns regarding mercury contamination in Guadalupe Creek, a tributary to the Guadalupe River, have recently surfaced. A "preassessment screen determination" prepared by the U. S. Fish and Wildlife Services pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and issued on February 17, 2000, suggests that mercury from defunct mercury mining operations in the Guadalupe Creek and Alamitos Creek watersheds may be capable of causing injuries to sediments, fish and wildlife resources. While a final decision on whether to proceed with a comprehensive natural resource damage assessment has yet to be made, the Corps and SCVWD staff involved in the flood control project have developed an amiable dialogue with state and Federal agency representatives involved in the mercury issue and have expressed their intent to fully cooperate with these agencies in addressing the contamination issue.

IV. EFFECTS OF THE PROJECT ACTION

General: Effects of the proposed project on steelhead are those associated with site preparation, excavation of the channel bed and bank, streamflow diversion, workspace dewatering and installation of bed and bank armoring. Effects will involve some temporary loss of riparian and instream habitat. Take is possible in the form of capture, trap, harm, harassment, injury, and mortality of adult and juvenile steelhead during and as a result of construction activities.

The following is a discussion of specific effects of the proposed project on steelhead. These effects are categorized into seven categories: alteration of riparian habitat, alteration of instream habitat structure, interruption of functioning instream habitat, sedimentation, turbidity, by-pass channel entrapment and fish passage improvements:

ALTERATION OF RIPARIAN HABITAT

The riparian zone acts as the interface between terrestrial and aquatic ecosystems by moderating the effects of upslope processes and provides important ecological functions (Spence et al. 1996, Flosi et al. 1998). Riparian vegetation, including shaded riverine aquatic (SRA) cover, provides juvenile steelhead cover from predators, increases habitat complexity,

provides a source of insect prey for juvenile salmonids and provides shade for maintaining water temperatures within suitable ranges for all life stages. The functional values of riparian corridors and the benefits they provide to stream fish populations are well documented (Karr and Schlosser 1978, Wesche et al. 1987, Gregory et al. 1991, Caselle et al. 1994, Wang et al. 1997). For this project, construction activities associated with grading and excavation of the riverbank and bank protection activities would affect 7.6 acres of the existing 12.4 acres of riparian vegetation (61 percent of the total in Contract 3A, 3B and 3C reaches) and 4,634 lf of the existing 7,820 lf of SRA cover (58 percent of the total in Contract 3A, 3B and 3C reaches). NMFS considers this impact significant because the existing amount of stream shading for the three reaches occurs in a highly urbanized area of downtown San Jose where the swath of the riparian vegetation corridor and SRA cover is sporadic and sparse with some areas supporting little if any riparian vegetation. Any removal of existing riparian vegetation can only exacerbate the existing marginal habitat condition of the downtown Guadalupe River for steelhead.

Water temperatures will be affected in the short-term by the removal of riparian vegetation and SRA cover. This impact will persist until intended mitigation activities associated with plantings of riparian vegetation and SRA cover begin to provide functional habitat (e.g., canopy cover). The Corps and SCVWD would prepare and implement a compensatory Monitoring and Mitigation Plan (U. S. Army Corps of Engineers and Santa Clara Valley Water District 2000) to replace and reestablish riparian vegetation and SRA cover removed during construction, and would replace as much of the affected SRA cover as possible onsite with the remainder of the affected SRA cover replaced offsite in Reach A and lower Guadalupe Creek.

Reach A was selected as an offsite mitigation area because of its close proximity to the project construction area. Guadalupe Creek was selected because it provides the opportunity to expand the range for steelhead rearing and spawning habitat in the upper tributaries of the Guadalupe River watershed. Both offsite mitigation sites currently provide very limited SRA cover and these additions would provide an improvement to aquatic habitat quality on these reaches.

Once mitigation plantings begin providing shade, increases in average maximum water temperatures associated with the project are expected to be not more than 3.5^0 F for the Contract 3 reach and 2.5^0 F for the downstream Contract 1 and 2 reaches (U.S. Army Corps of Engineers 2000). Simulated post-mitigation temperatures in the offsite mitigation Reach A and lower Guadalupe Creek areas are projected to be as much as 2.2^0 F ^{0}and 7.6 F lower, respectively, than pre-project temperatures. NMFS believes the short-term temperature increases in Contracts 1,2, and 3 may preclude steelhead from fully utilizing cover and rearing opportunities within the project areas. The applicant propose to take remedial actions as proposed in its MMP for short-term thermal impacts by including an adaptive management strategy that would consider placing large boxed trees along the low-flow channel in Contracts 2, 3A, and 3B from June through October until mitigation plantings have matured. The applicant will also consider planting faster growing tees in SRA mitigation sites and possibly installing shade cloth over the constructed low-flow channel in Contract 3A and 3B reaches (U. S. Army Corps of Engineers and Santa Clara Valley Water District 2000). However, NMFS believes the temporary loss of riparian habitat and the uncertainty of mitigation planting success could result in harm or mortality to rearing juvenile steelhead by removing cover from predators, reducing nutrient sources and increasing water temperatures. In the absence of the applicant taking any remedial actions, steelhead may be precluded from use of the project area and possibly prevent or delay their access to spawning reaches.

ALTERATION OF INSTREAM HABITAT STRUCTURE

Instream habitat structure includes channel substrate and channel form. Substrate, the composition of channel bottom, is an important component of steelhead spawning and rearing habitat requirements. In general, adult steelhead require relatively clean gravels in which to lay their eggs. Steelhead prefer gravel sizes in the 0.5 to 6 inch range dominated by 2 to 3-inch gravel (Flosi et al. 1998). Gravels are also important for maintenance of healthy invertebrate prey populations. Low gravel abundance and/or quality can limit productivity and abundance of steelhead in the project area. Channel form includes riffles, runs and pools and these habitat types are preferred by young-of-year juveniles (Flosi et al. 1998). Riffles provide important fish spawning habitat and food-producing areas and pools, because of their depth, provide cover and sources of cooler water temperatures during the warm months. Water depths are also important for fish passage. The minimum stream depth necessary for successful upstream migration is 7.2 inches (Thompson 1972). Reiser and Bjornn (1979) indicated that steelhead preferred a depth of 9 inches or more.

The project action relative to channel widening and armoring of the channel invert (bottom) will result in the direct and permanent loss of channel gravels by either direct removal or overlaying with concrete or concrete cellular mattresses (CCM). Other existing habitat features including pools, riffles and runs will be lost to construction activities. The loss of spawning gravels will be mitigated by the continual placement of river-run gravels by the Corps and SCVWD at appropriate spawning habitat locations in both the natural and armored channel invert (bottom) sections after construction (U. S. Army Corps of Engineers and Santa Clara Valley Water District 2000). In addition, the placement of invert stabilization structures (grade control structures) in sections of the unarmored, natural river channel of Contracts 3A and 3B are intended to reduce erosion of the river bottom, increase instream cover, provide improved spawning and rearing habitat by the creation of pools and riffles, and facilitate gravel deposition. In the armored river-bottom sections of Contract 3A and 3B, the construction of a low-flow channel using concrete sills, with logs, boulders and gravel placed at grade on top of the CCM-armored river bottom will concentrate flows in a low-flow channel. The low-flow channel is intended to allow fish passage through the reach by increasing water depth and maintaining a minimum depth of 7.2 inches at flows as low as 4 cfs. The low-flow channel check structures are also intended to maintain a minimum average water depth of 1.2 ft when the flow is zero to 1 cfs. The low-flow channel in the armored bottom of Contract 3C will have a trapezoid/boulder design. This design will also increase water depth during low-flows to provide fish passage. The range of depth for the trapezoid/boulder low-flow channel is 0.8 to 1.1 ft during flows as low as 4 cfs. These low-flow channels are expected to maintain cooler water temperatures than would occur if the flows were diffused over the river bottom. Fish passage is assured through implementation of a mitigation and monitoring plan that utilizes an adaptive management strategy (U. S. Army Corps of Engineers and Santa Clara Valley Water District 2000). The adaptive management process provides a mechanism by which remedial actions can be implemented if measurable objectives of ecological functions and habitat values affected by the project are not achieved.

Although proposed mitigation and monitoring actions (U. S. Army Corps of Engineers and Santa Clara Valley Water District 2000) for evaluating and restocking gravel levels as needed and the installation of a constructed low-flow channel would mitigate for changes in channel form (e.g., loss of pools), NMFS believes that the outcome of these methods cannot be accurately predicted. Further, even if mitigation actions are adaptively managed for, steelhead

may still incur short-term impacts until remedial actions take effect. Consequently, NMFS expects this project to harm steelhead due to habitat modification or degradation to spawning and feeding areas that would preclude, interrupt or delay spawning; reduce spawning success, reduce prey availability, preclude or reduce migratory passage, and, degrade or reduce available rearing areas during and immediately after the construction period.

INTERRUPTION OF FUNCTIONING INSTREAM HABITAT

Instream habitat will be temporarily lost when the streamflow is diverted (e.g., coffer dams or culverts) and the workspace is dewatered as a result of project construction. In channel construction such as channel widening, construction of reinforced banks, bridge replacement, and other activities requiring stream dewatering, heavy equipment operation in the channel or stream crossing could harm or kill rearing steelhead because riffle, run, and pool habitats used by these early life history phases could be impacted. Diverting streamflow could harm individual anadromous fish by concentrating or stranding them in residual wetted areas (Cushman 1985) or by causing them to migrate to adjacent habitats that do not meet their needs for survival (Clothier 1953, Clothier 1954, Kraft 1972, Campbell and Scott 1984). Dewatering the workspace may cause harm, injury, or death to steelhead by confining them to areas that are predisposed to dewatering (or may be intentionally dewatered), increased water temperature, decreased dissolved oxygen concentration, and predation (Cushman 1985). Impacts associated with channel construction activities will be confined to the April 15 to October 15 timeframe each year. Construction requiring streamflow diversion and dewatering, stream crossings, or work in the channel invert will not commence until May 1 provided that average daily water temperatures exceed 68 ^{0} F for a minimum of 5 consecutive days. Should the stream-monitoring criteria not be met, river bottom work and stream dewatering would not be allowed to commence until June 1. Because NMFS believes that adult steelhead will have migrated from the area due to natural increases in water temperature, only juvenile steelhead rearing in the project areas may be harmed, injured or killed as a result of instream construction activities.

The applicant has proposed to remove any remaining steelhead by means of backpack electroshockers used by qualified fisheries biologist (in coordination with NMFS) and relocated to suitable areas immediately upstream or downstream of the work space . The number of steelhead that may become stranded is difficult to estimate because of the uncertainty of steelhead abundance in this river and the project area. If strandings do occur, relocation is expected to benefit these fish by relocating them from areas where they would be extremely susceptible to death or serious injury. However, some minimal mortality associated with capture and relocation may occur.

BYPASS CHANNEL ENTRAPMENT AND MIGRATION DIVERSION

The proposed project includes the construction of a underground bypass system and the completion of the Woz Way-Park Avenue bypass. The underground bypass system would consist of three box culverts located on the eastern bank of the Guadalupe River. The three box culverts would be 5,000 ft, 4, 000 ft, and 2,500 ft long. Both the Woz-Park bypass and the proposed bypass system will become operational at the completion of the project. The flow thresholds for both bypasses is 1,500 cubic feet per second (cfs). Use of the bypass channels avoids and minimizes adverse effects on riparian vegetation, including SRA cover that would have been removed if the natural river channel had been widened in order to accommodate

flood flows in these portions of the river. The potential exists for adult and juvenile steelhead to be swept downstream into either bypass channels during flood events and possibly become stranded during receding flows. The likelihood of fish entrapment during receding flows increases should pool habitats form within the channel bottoms of the respective bypass channels. The design of both bypass channels will exclude features (e.g., gradient control structures) that could result in the formation of ponded-water habitats with the potential to entrap fish during receding flows. It is also believed that the bypass channels would operate infrequently and for short durations. An analysis of daily peak flow determined that during the 6-month rainy season from 1972 through 1991, Guadalupe River flows equaled or exceeded 1,500 cfs on 42 days or approximately 1.5 percent of the total days during the rainy season (U. S. Army Corps of Engineers 2000). Based on a proposed design that avoids features (e.g., gradient-control structures) for trapping steelhead in the bypass culvert, the rarity of 1500 cfs flows, and because the downstream end of the bypass culverts would reconnect with the Guadalupe River, NMFS believes that juvenile and adult steelhead entering the bypass culverts on downstream flows would be carried unimpeded through the bypass channels and immediately reenter the river.

The potential also exists for upstream migrating adults to stray from the river and enter the bypass channels during flood events when the bypass systems are operating. A central issue is whether migrating adults will be attracted to bypass flows and veer from the natural channel during flood events as it has been long assumed that fish are attracted to areas of highest momentum, that is, highest flow and highest velocity, when migrating upstream (Powers and Orsborn 1985, Bell 1991). Based on estimates of velocities at both bypass outlets and the natural channel of the Guadalupe River, flow velocities in both bypass channels would exceed natural channel velocities beginning with the 20 year flood event (Tables 1 and 2). At 20 year flood flows of 9300 cfs and 7590 cfs in the Santa Clara Street-Coleman Avenue bypass and the Woz Way-Park Avenue bypass, respectively, bypass water velocities of 8.3 feet per second (fps) and 7.4 fps, would exceed the adjacent natural channel velocities of 7.9 fps and 5.3 fps, respectively. Flows in both bypass channels are expected to be greater than flows in the natural channel approximately 50 to 55 percent of the time that flood water diverts to the bypasses (pers. comm., N. Bicknese, USACOE, Sacramento District). However, according to Thompson (1972), the maximum water velocity that enables upstream migration of adult steelhead is 8.0 fps. Consequently, once flows in the bypass become more attractive to upstream migrants in the sense that the flows are swifter in the bypass channel, these bypass flow velocities begin to exceed the maximum water velocity threshold calculated for steelhead. Another consideration is whether upstream migration would actually be occurring during these excessive flood events. Bates (1992) suggests that upstream migrants do not move during highest river flows and based on the criteria of Thompson (1972), these upstream migrations would probably cease at 20 year flood events or greater.

The presence of the darkened environment of the enclosed bypass channels may also create an obstacle to fish passage. Gauley (1967) found that steelhead selected lighted entrances over dark entrances when encountering fishway entrances. Whether adult steelhead would enter the bypass at night is unlikely as most adult steelhead appear to migrate during daylight hours (Bates 1992). Even though some upstream migrants may not be completely averted from entering the bypass and therefore become delayed in their migration, NMFS believes that the potential for this to occur will be low and should not result in the harm or harassment or stranding of adult steelhead as several natural factors regulating the migrating behavior of adult steelhead will be operating during flood events.

Table 1. Estimate of water velocities at the Santa Clara Street-Coleman Avenue box culvert outlets and the natural channel of the Guadalupe River (pers. comm. N. Bicknese, Corps, Sacramento, CA, April 20, 2000).

Flood Frequency	**Total Flow**	**Natural Channel**	**Box Culvert**
Years	cubic feet per sec. (cfs)	feet/sec. (fps)	feet/ sec. (fps)
2	2350	4.27	0.31
5	4500	5.64	3.37
10	6700	6.79	5.98
20	9300	7.92	8.30
50	13,500	9.32	11.30
100	17,000	10.36	13.51

Table 2. Estimate of water velocities at Woz Way-Park Avenue box culvert outlets and the natural channel of the Guadalupe River (pers. comm. N. Bicknese, Corps, Sacramento, CA, May 1, 2000).

Flood Frequency	**Total Flow**	**Natural Channel**	**Box Culvert**
Years	cubic feet per sec. (cfs)	feet/sec. (fps)	feet/ sec. (fps)
2	1752	4.80	0.80
5	3500	4.90	2.90
10	5370	5.10	5.10
20	7590	5.30	7.40
50	11,330	5.60	9.60
100	14,600	5.90	10.70

SEDIMENTATION

Increased sedimentation (rapid settling of suspended sediment) would result mostly from erosion contributed into the Guadalupe River resulting from or resuspended during construction activities including excavation and backfilling, bridge removal and replacement, construction of bypass culverts and floodwalls, installation of streamflow diversion devices, installation of cofferdams, installation of pipes, culverts and gabions, roadway removal and repaving and vegetation removal and replanting in the Guadalupe River and Guadalupe Creek. The specific sedimentation rate would depend on the duration, volume, and frequency that sediment is contributed to the river. Among other impacts, substantial sedimentation rates could bury less mobile organisms (Cordone and Kelley 1961) that serve as fish forage, and degrade instream habitat conditions (Cordone and Kelley 1961, Eaglin and Hubert 1993). Although specific sedimentation rates have not been estimated, they are expected to be low to moderate and temporarily occur during the summer construction window. These impacts will occur repeatedly during each construction season. Based on the implementation of proper control measures proposed by the applicant including a vegetation protection plan, stormwater pollution prevention plan, erosion and sediment control plan, and limiting in-channel construction to the summer, low-precipitation period, sedimentation in the project area will likely only be a temporary and minor impact on the steelhead that may be present.

TURBIDITY

Elevated levels of turbidity (suspended particulate matter) may result when fine sediment is resuspended in the river during excavation and backfilling, installation of streamflow diversion devices, bridge and ramp construction, installation of cofferdams, installation of pipes, culverts and gabions, roadway removal and repaving and vegetation removal and replanting. Turbidity may cause indirect harm, injury, or mortality to juvenile steelhead in the vicinity and downstream of the project area. High turbidity concentrations can cause fish mortality, reduce fish feeding efficiency and decrease food availability (Berg and Northcote 1985, McLeay et al. 1987, Gregory and Northcote 1993). The effect of any elevated turbidity level on juvenile anadromous fish is difficult to evaluate as the amount of sediment contributed and the resulting turbidity level is speculative. The duration and concentration of the turbidity would depend on the extent of the activities listed above and the efforts taken to eliminate and minimize activities within the streambed. NMFS believes turbidity levels could increase substantially over ambient levels during each construction period over the lifetime of project construction. However, based on the implementation of proper control measures proposed by the applicant including a vegetation protection plan, stormwater pollution prevention plan, erosion and sediment control plan, and limiting in-channel construction to the summer, low-precipitation period, turbidity in the project area will likely only be a temporary and minor impact on the steelhead that may be present.

FISH PASSAGE IMPROVEMENTS

Barriers to fish passage through the Guadalupe River project area and to the upstream mitigation site will be removed or modified to improve fish passage. Proposed channel modifications include the removal of the USGS gaging weir upstream of the St. John Street bridge and replacement with an invert stabilization structure designed to accommodate fish passage under low-flow conditions. An exposed gas and sewer line that crosses the river under the Old Julian Street bridge will be relocated. Removing barriers in the project area will improve access for fish migrating from San Francisco Bay upstream to the mitigation sites on

Guadalupe Creek. The project action will improve passage for steelhead on the Guadalupe River system because existing impediments during certain low flow regimes currently hamper steelhead passage.

V. CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the ESA. Activities that may occur in the action area include the Guadalupe River Park Project (master plan for the development of recreational facilities along the Guadalupe River), the San Jose International Airport Expansion Plan (street widening, bridge removal and replacement) and the Santa Clara Valley Water District Maintenance Program (streambed maintenance). Population growth in the area (e.g., net population change of 423,200 has occurred from 1990-1997 in the San Francisco-Oakland-San Jose metropolitan area (U. S. Census Bureau 1998)) could add additional sources of surface water runoff in the project area. The cumulative effects of the anticipated projects may exacerbate water quality conditions, primarily sedimentation and turbidity during river construction.

VI. INTEGRATION AND SYNTHESIS OF EFFECTS

Based on the effects analysis, the most serious impact to steelhead in the project area of the Guadalupe River appears to be the temporary and permanent alteration of riparian habitat, instream habitat structure and interruption of functioning instream habitat. All of these impacts are expected to result in harm or mortality to adult and juvenile steelhead. While the alteration and interruption of bank and instream habitat will be permanent in some areas, its removal does not impose an adverse threat to the survival and recovery of steelhead in the Guadalupe River system for four reasons. First, the project, which spans a 2.6 mile section of a highly urbanized section of the Guadalupe River, has been intentionally designed to avoid and minimize the loss of riparian habitat. Of this river stretch, 61 percent of the existing riparian vegetation and 59 percent of the existing SRA cover will be affected but fully mitigated in both the project area and at offsite mitigation areas with plantings of native vegetation. In addition, the use of two bypass channels substantially lessens the impacts to existing riparian and SRA cover habitat. Second, instream impacts will be mitigated by including an artificial low-flow channel in the design of the armored sections of the river bottom to provide fish passage throughout the project area. Invert stabilization structures placed in the natural river bottom will provide a natural low-flow channel and incorporate particular habitat features such as plunge pools and riffle habitat into the project design. Further, river-run gravels will be placed at appropriate spawning habitat locations whenever gravel coverage drops below established guidelines. Third, all alterations to instream habitat will be fully mitigated and an adaptive management strategy will be implemented to insure that measurable indicators of performance are met as part of an ongoing comprehensive mitigation and monitoring plan that will be supervised by an adaptive management team comprised of members of the Colloborative. NMFS has been an active participant with other state and federal natural resource agencies in the development of the plan as part of the Guadalupe River Flood Control Project Collaborative and undoubtedly will continue in a supervisory role with the other state and federal natural resource agencies. Lastly, because all habitat impacts not mitigated onsite will be compensated by offsite mitigation efforts at Reach A and Guadalupe Creek this will extend the available habitat to steelhead in

other reaches both upstream and downstream of the project area in the Guadalupe River watershed that currently do not exist. These net benefits to steelhead habitat should assist in the recovery of the population and improve the viability of steelhead in this particular system. The remaining project effects and cumulative effects are fairly minor in nature and do not impose serious threats to this steelhead population or to the larger ESU.

While some areas of the project area will modify habitat, the replacement of riparian and SRA cover habitat, spawning gravels, the creation of pool and riffle habitat and the removal of fish barriers will maintain and improve the character of habitat such that the project action will not diminish the value of critical habitat for both the survival and recovery of steelhead.

VII. CONCLUSION

After reviewing the best available scientific and commercial data, the current status of steelhead, the environmental baseline for the action area, the effects of the flood control project, and the cumulative effects, it is NMFS' biological opinion that the project action, as proposed, is not likely to jeopardize the continued existence of the federally threatened Central California Coast ESU of steelhead or result in the destruction or adverse modification of its critical habitat.

VIII. INCIDENTAL TAKE STATEMENT

Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Harm is further defined to include significant habitat modification or degradation which actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including breeding, spawning, rearing, migrating, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7 (b) (4) and 7 (o)(2), taking that is incidental to and not intended as part of the proposed action is not considered to be prohibited taking under the ESA provided that such taking is in compliance with this Incidental Take Statement.

Section 7 (b)(4) of the ESA provides for the issuance of an incidental take statement for the agency action if the biological opinion concludes that the proposed action is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of critical habitat. In such a situation, NMFS will issue an incidental take statement specifying the impact of any incidental taking of endangered or threatened species, providing Reasonable and Prudent Measures that are necessary to minimize impacts, and setting forth the Terms and Conditions with which the action agency must comply in order to implement the Reasonable and Prudent Measures.

The measures described below are non-discretionary and must be undertaken by the Corps so that they become binding conditions of any grant or permit issued to the SCVWD, as appropriate, for the exemption in section 7(o)(2) to apply. The Corps has a continuing duty to regulate the activity covered by this Incidental Take Statement. If Corps (1) fails to assume and implement the Terms and Conditions or (2) fails to require the SCVWD to adhere to the Terms and Conditions of the Incidental Take Statement through enforceable terms that are added to

the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the Corps must report the progress of the action and its impact on the species to NMFS as specified in the Incidental Take Statement (50 CFR §402.14(I)(3)).

Amount or extent of take anticipated

The NMFS anticipates incidental take of steelhead will be difficult to detect due to the dimensions and variability of the Guadalupe River system and the operational complexities of the phased flood control construction activities. However, the instream and riparian habitat of the steelhead will be both temporarily or permanently modified by the proposed action. This modification is expected to result in the harm, harassment, and mortality of juvenile and adult steelhead by changing water temperatures, prey availability and reducing available spawning habitat. Therefore, the level of take of this species is measured by the temporary loss of an estimated 7.6 acres of riparian vegetation, 4,634 linear feet of SRA cover habitat and 20,500 ft^2 of spawning gravel habitat. These losses adversely affect adult steelhead spawning and juvenile steelhead rearing and foraging opportunities and may result in reduced survival. In addition, some fish may be stranded during construction (and relocated). NMFS believes that stranding will be a rare event that will affect a few fish, probably less than ten fish per construction season. If stranded fish are relocated, it is likely that most will survive the relocation, thereby minimizing impacts to the population. NMFS anticipates that no more than 10 percent of the relocated fish may die as a result of capture and handling methods/effects. Take is not expected to occur from bypass channel operations.

Effect of the take

In the accompanying biological opinion/conference opinion, NMFS determined that this level of anticipated take is not likely to result in jeopardy to the Central California Coast Steelhead ESU.

Reasonable and Prudent Measures

The NMFS believes the following reasonable and prudent measures are necessary and appropriate to minimize impacts of incidental take of threatened Central California Coast Steelhead caused by activities related to the Guadalupe River Flood Control Project:

1. Avoid and minimize bank and instream construction impacts to the Guadalupe River ecosystem.

2. Minimize the extent of temporary and permanent changes to instream and riparian habitat and ensure that proposed mitigation measures used to replace these losses meet identified measurable objectives (U. S. Army Corps of Engineers and Santa Clara Valley Water District 2000).

3. Use a fisheries biologist for the purposes of monitoring the affected area, and for removing and relocating steelhead from the affected area.

4. Implement adequate control measures to avoid or minimize sediment, turbidity and pollutant inputs to the Guadalupe River.

5. Prepare and submit monitoring reports annually to document status of construction as well as mitigation activities and performance.

Terms and Conditions

The Corps is responsible for the following Terms and Conditions that implement the reasonable and prudent measures described above. These Terms and Conditions are intended to minimize incidental take of steelhead associated with the Guadalupe River Flood Control Project.

1. The following Terms and Conditions implement Reasonable and Prudent Measure No. 1.

   A. The Corps and SCVWD shall isolate each workspace from flowing water for the purpose of avoiding heavy equipment in flowing water, sedimentation, turbidity, and direct effects to steelhead. Prior to construction activities, diversion materials shall be installed (e.g., sandbag cofferdams, straw bales to divert streamflow away or around each workspace. The diversion shall remain in place during the project construction, then removed immediately after work is completed.

   B. The Corps and SCVWD shall ensure and maintain a corridor for unimpeded passage of steelhead during construction of the project action.

   C. When practical, the Corps and SCVWD shall use existing points of ingress or egress, or perform work from the top of the river bank, for the purposes of avoiding work and heavy equipment in flowing water, and disturbing riverbank, vegetation, and instream habitat.

   D. The Corps and SCVWD shall confine in-channel construction activities to the summer low-precipitation period (April 15 - October 15), with the condition that construction requiring stream dewatering, stream crossing or work in the channel invert not commence until May 1 assuming that two stream-monitoring criteria are met. The first is that a qualified fisheries biologist (see Term and Condition No. 3A) survey the project area and verify the absence of juvenile steelhead for a minimum of three consecutive sampling days. The second is that average daily water temperatures exceed 68^0 F for a minimum of three consecutive days. Should stream-monitoring criteria not be met, channel invert work and stream dewatering will not be allowed until June 1.

   E. All aquatic macrofauna that may be affected by instream activities shall be removed from the work site by a qualified fishery biologist (see Term and Condition No. 3B) and placed downstream.

   F. The Corps and SCVWD shall examine all opportunities for reducing the amount of hardscape bank and river bottom armoring (e.g., New Julian Bridge, Coleman Avenue Bridge, bypass system inlet structures) whenever possible.

   G. The Corps and SCVWD shall design a low-flow channel and bypass channel outlets for both the Santa Clara Street-Coleman Avenue bypass and the Woz Way-Park Avenue bypass protective to steelhead and approved by NMFS.

H. A worker education program shall be conducted prior to construction activities on the importance of protecting steelhead and their critical habitat and the project measures to do so.

2. The following Terms and Conditions implement Reasonable and Prudent Measure No. 2.

A. The Corps or SCVWD shall photograph the project area prior to and after each construction season for the purpose of developing a reference library of instream and riparian habitat characteristics.

B. The Corps and SCVWD shall prepare and implement a Mitigation and Monitoring Plan to address the replacement and reestablishment of riparian vegetation (including SRA cover) and instream habitat functions. The pan will also describe maintenance procedures to protect and enhance the riparian system. The Mitigation and Monitoring Plan shall include offsite SRA mitigation that could expand the existing range of steelhead in the watershed. The plan shall be submitted to NMFS for review and approval before initiating construction. NMFS shall provide in writing either concurrence with the plan or notification to the Corps and SCVWD that plan modifications are necessary for acceptance.

C. The Corps and SCVWD shall incorporate an adaptive management process to insure that monitored indicators of measurable objectives are fully met and, if necessary, appropriate remedial actions are taken to ensure that agreed upon ecological functions and habitat values defined in the MMP and affected by the project are reestablished and maintained.

D. All mitigation areas that have been set aside as compensation for project impacts resulting from this project or any other project will not be disturbed or impacted during construction activities and will be preserved in perpetuity and not used as mitigation for other projects.

E. The Corps and SCVWD shall prepare and implement a Vegetation Protection Plan to prevent the inadvertent loss of riparian vegetation above and beyond that necessarily resulting from project construction activities. The plan will also describe remedial actions required if preserved trees are inadvertently impacted by construction activities. The plan shall be submitted to NMFS for review and approval before initiating construction. NMFS shall provide in writing either concurrence with the plan or notification to the Corps and SCVWD that plan modifications are necessary for acceptance.

3. The following Terms and Conditions implement Reasonable and Prudent Measure No. 3.

A. The Corps and SCVWD shall retain a fisheries biologist with expertise in the areas of resident or anadromous salmonid biology and ecology, fish/habitat relationships, and biological monitoring; and, handling, collecting, and relocating salmonid species. The biologist will monitor activities prior to and during

inchannel activities especially during temporary blockage or redirection of the flow of water through the use of coffer dams or culverts.

B. The biologist shall monitor placement and removal of channel diversions for the purpose of removing any steelhead that would be adversely affected. The biologist shall capture such steelhead and individuals stranded in residual wetted areas as a result of streamflow diversion and workspace dewatering, and relocate the individuals to a suitable instream location immediately upstream or downstream of the particular project area. One or more of the following NMFS approved methods shall be used to capture steelhead: dip net, seine, throw net, minnow trap, and, hand. Electrofishing may only be used if NMFS has reviewed the biologist's qualifications and given approval. The biologist shall note the number of individual steelhead observed in the affected area, the number of individuals relocated, and the date and time of the collection and relocation.

C. The biologist shall monitor inchannel activities, instream habitat, and performance of sediment control/detention devices (see Term and Condition No. 4) for the purpose of identifying and reconciling any condition that could adversely affect steelhead or their habitat. The Corps and SCVWD and their contractors, upon notification from the biologist, shall halt the work activity causing the condition affecting steelhead and recommend measures for avoiding the condition. Work can resume when NMFS agrees that the proposed measures are appropriate for avoiding the condition.

D. The biologist shall contact NMFS (707-575-6050) immediately if one or more steelhead are found dead or injured. The purpose of the contact shall be to review the activities resulting in take and to determine if additional protective measures are required.

4. The following Terms and Conditions implement Reasonable and Prudent Measure No. 4.

A. Erosion control and sediment detention devices shall be incorporated into the project and implemented at the time of the project action. These devices shall be in place during the project action, and after if necessary, for the purpose of minimizing fine sediment and sediment/water slurry input to flowing water. The devices shall be placed at all locations where the likelihood of sediment input exists.

B. At the time of the project action, the Corps and SCVWD shall prepare and implement a Storm Water Pollution Prevention Plan as part of the National Pollutant Discharge Elimination System (NPDES) to avoid or minimize increased sediment and turbidity impacts. This plan will be reviewed and approved by NMFS prior to construction.

C. The Corps and SCVWD shall prepare and implement an Erosion and Sediment Control Plan for minimizing the potential for sediment input into the stream, a Toxic Material Control and Spill Response Plan for preventing toxic material spills, a Soil Management Plan that provides criteria for classifying wastes in soil and managing soils possibly contaminated with mercury and methyl mercury

concentrations and a Hazardous and Toxic Materials Contingency Plan in the event that unlisted hazardous and toxic sites are uncovered during construction.

D. The Corps and SCVWD shall fully cooperate with state and federal agencies involved with mercury contamination issues to insure that actions involving the flood control project including mitigation issues are compatible and conducted in a cooperative manner with potential mercury contamination cleanup actions.

E. All water within the construction site shall be pumped off-site or into a settling basin or tank and not directly into the downstream channel.

F. All pilings, support piers, abutments and rock materials shall be non-toxic. Any combination of wood, plastic, concrete, or steel is acceptable, provided that there are no toxic coatings, chemical antifouling products, or other treatments that may leach into the surrounding environment.

5. The following Terms and Conditions implement Reasonable and Prudent Measure No. 5.

A. The Corps and SCVWD shall provide a written construction monitoring report to NMFS within 30 working days following completion of each construction season (no later than November 30). The report shall include the number of steelhead killed or injured during the project action and biological monitoring; the number and size of steelhead; any effect of the project action on steelhead that was not previously considered (reinitiation of consultation would be required, see section IX, item 2 of the Biological Opinion); photographs documenting compliance with Reasonable and Prudent Measures No. 1, 2 and 4; and, photographs taken before and after work activity.

B. The Corps and SCVWD shall provide a written report describing results of their mitigation activities to NMFS on a schedule that is developed in the Mitigation and Monitoring Plan. At the very minimum, the report shall include a description of the locations planted or seeded, the area (ft^2) revegetated, a plant palette, planting or seeding methods, performance or success criteria, and pre- and post-planting color photographs of the revegetated area.

C. The Corps and SCVWD shall provide a written report describing results of their Vegetation Protection Plan to NMFS on a schedule that is developed during the adoption of the plan.

D. All reports, proposed plans, and annual updates shall be submitted to: Protected Resources Division Supervisor, NMFS, 777 Sonoma Ave., Room 325, (707) 575-6050, Fax (707) 578-3435.

IX. REINITIATION OF CONSULTATION

Reinitiation of formal consultation is required if there is discretionary Federal involvement or control over the action and if (1) the amount or extent of taking specified in any incidental take statement is exceeded; (2) new information reveals effects of the action that may affect listed

species or critical habitat in a manner or to an extent not previously considered; (3) the action is subsequently modified in a manner that causes an effect to the listed species that was not considered in the biological opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. If the amount or extent of incidental take is exceeded, consultation shall be reinitiated immediately.

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Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA)

ESSENTIAL FISH HABITAT CONSERVATION RECOMMENDATIONS[3]

The Pacific Fisheries Management Council has recommended an EFH identification for the Pacific salmon fishery which has yet to be approved by the Secretary of Commerce. If approval occurs before the Corps has issued a permit, they will need to provide a detailed response in writing describing the measures proposed by the Corps for avoiding, mitigating, or offsetting the impacts of the project on EFH.

I. IDENTIFICATION OF ESSENTIAL FISH HABITAT

The geographic extent of freshwater essential fish habitat (EFH) for the Pacific salmon fishery is proposed as waters currently or historically accessible to salmon within specific U. S Geological Survey hydrologic units (Pacific Fisheries Management Council 1999). For San Francisco Bay, the aquatic areas that may be identified as EFH for salmon are within hydrologic unit maps numbered 1805003 and 1805004 (titled Coyote and San Francisco Bay, respectively) that includes Santa Clara County through which the Guadalupe River flows.

Chinook salmon (*Oncorhynchus tshawytscha*) occur in the Guadalupe River drainage and may be part of the California Central Valley fall/late-fall run ESU[4]. Adults have been documented on the Guadalupe River at least since 1986 (Ulmer 1988 as reported in USFWS 1998). Adults are known to migrate up the Guadalupe River and have been reported as far upstream at the Alamitos drop structure immediately upstream of Blossom Hill Road (Santa Clara Valley Water District and U. S. Army Corps of Engineers 1998). Within the project area, chinook were observed spawning in November of 1986 and 1987 in Reach 9 (Santa Clara Valley Water District and U. S. Army Corps of Engineers 1998). During stream surveys in 1987, 28-31 redds were found at 13 potential spawning sites from Canoas Creek to I-280 with the greatest concentration (12-13 each) observed in Reaches 7A and 9A. The number of redds appears to be increasing as 57 were counted in the river in the 1995-96 season (Santa Clara Valley Water District and U. S. Army Corps of Engineers 1998). Juvenile chinook have also been documented in Reach 11 (Santa Clara Valley Water District and U. S. Army Corps of Engineers 1998). Based on the observations of redds and juvenile chinook salmon in the project area,

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[3]The 1996 amendments to the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) set forth new mandates for the National Marine Fisheries Service (NMFS) and federal action agencies to protect important marine and anadromous fish habitat. Federal action agencies which fund, permit, or carry out activities that may adversely impact EFH are required to consult with NMFS regarding potential adverse effects of their actions on EFH, and respond in writing to NMFS "EFH Conservation Recommendations."

[4]Recent changes to the listing of chinook salmon under the Endangered Species Act for the Guadalupe River are noted in the Federal Register (Vol. 64, No. 179, September 16, 1999). NMFS has found that the Central Valley fall and late-fall chinook evolutionarily significant unit does not warrant a threatened status as originally proposed. NMFS will protect and enhance the habitat of these chinook salmon through the "essential fish habitat" provisions of the Magnuson-Stevens Act.

NMFS also believes that the areas affected by the project action may provide essential fish habitat (EFH) for spawning and rearing chinook salmon.

LIFE HISTORY AND HABITAT REQUIREMENTS

General life history information for chinook salmon is summarized below. Further detailed information on chinook salmon ESUs are available in the NMFS status review of chinook salmon from Washington, Idaho, Oregon, and California (Myers et al. 1998), and the NMFS proposed rule for listing several ESUs of chinook salmon (NMFS 1998).

Chinook salmon spawning generally occurs in swift, relatively shallow riffles or along the edges of fast runs at depths greater than 6 inches, usually 1-3 feet to 10-15 feet. Preferred spawning substrate is clean loose gravel. Gravels are unsuitable when they have been cemented with clay or fines or when sediments settle out onto redds reducing intergravel percolation (NMFS 1997).

At the time of emergence from their gravel nests, most fry disperse downstream towards the estuary, hiding in the gravel or stationing in calm, shallow waters with fine sediments substrate and bank cover such as tree roots, logs, and submerged or overhead vegetation. As they grow, the juveniles associate with coarser substrates along the stream margin or farther from shore (Healey 1991). Along the emigration route, submerged and overhead cover in the form of rocks, submerged aquatic vegetation, logs, riparian vegetation, and undercut banks provide food, shade and protect juveniles from predation. Chinook salmon in the Southern Oregon and California Coastal ESU exhibit an ocean-type life history, that is, they typically migrate to seawater in their first year of life (NMFS 1998). However, when environmental conditions are not conducive to subyearling emigration, ocean-type chinook salmon may remain in freshwater for their entire first year (NMFS 1998).

Principal foods of chinook while rearing in freshwater and estuarine environments are larval and adult insects and zooplankton such as *Daphnia,* flys, gnats, mosquitoes or copepods (Kjelson et al. 1982), stonefly nymphs or beetle larvae (Chapman and Quistdorff 1938) as well as other estuarine and freshwater invertebrates.

II. PROPOSED ACTION

The proposed action is described in Part II of the preceding Biological Opinion for the threatened Central California Coast Steelhead ESU.

III. EFFECTS OF THE PROJECT ACTION

Due to the common habitat requirements shared by steelhead and chinook salmon including migration corridors, water quality conditions, thermal preferences, and rearing and spawning habitat requirements, the direct, indirect and cumulative adverse effects of the proposed project actions predicted for steelhead will also adversely effect the potential EFH for chinook salmon. Adverse effects to EFH will result from activities associated with site preparation, excavation of the channel bed and bank, streamflow diversion, workspace dewatering and installation of bank structures. These project activities will result in temporary and permanent losses of riparian

habitat, rearing and spawning habitat, temporary changes in water temperature, possible sedimentation and turbidity events, and interruptions in ecosystem functions in the instream habitat. These effects are discussed in greater detail in the preceding Biological Opinion.

IV. CONCLUSION

Upon review of the effects of the flood control project, NMFS believes that the project action, as proposed, will adversely affect the potential EFH of chinook salmon in the project area of the Guadalupe River.

V. EFH CONSERVATION RECOMMENDATIONS

NMFS recommends that Reasonable and Prudent Measures Nos. 1, 2, 4 and 5 and their respective Terms and Conditions listed in the Incidental Take Statement prepared for the Central California Coast Steelhead ESU in the preceding Biological Opinion, and, appropriate for EFH, be adopted. Reasonable and Prudent Measures Nos. 1, 2, 4 and 5 and their respective Terms and Conditions are repeated below as Conservation Recommendations:

Conservation Recommendations

1. Avoid and minimize bank and instream construction impacts to the Guadalupe River ecosystem.

2. Minimize the extent of temporary and permanent changes to instream and riparian habitat and ensure that proposed mitigation measures used to replace these losses are fully successful.

3. (Not included)

4. Implement adequate control measures to avoid or minimize sediment, turbidity and pollutant inputs to the Guadalupe River.

5. Prepare and submit monitoring reports annually to document status of construction and mitigation activities and performance.

Terms and Conditions

The Corps should consider the following Terms and Conditions that implement the Conservation Recommendations described above.

1. The following Terms and Conditions implement Conservation Recommendation No. 1.

   A. The Corps and SCVWD should isolate each workspace from flowing water for the purpose of avoiding heavy equipment in flowing water, sedimentation, and turbidity. Prior to construction activities, diversion materials should be installed (e.g., sandbag cofferdams, straw bales to divert streamflow away or around each workspace. The diversion should remain in place during project construction, then removed immediately after work is completed.

B. The Corps and SCVWD should ensure and maintain a corridor for unimpeded passage of chinook during construction of the project action.

C. When practical, the Corps and SCVWD should use existing points of ingress or egress, or perform work from the top of the river bank, for the purposes of avoiding work and heavy equipment in flowing water, and disturbing riverbank, vegetation, and instream habitat.

D. A worker education program should be conducted prior to construction activities each on the importance of protecting EFH and the measures to do so.

2. The following Terms and Conditions implement Conservation Recommendation No. 2.

A. The Corps or SCVWD should photograph the project area prior to and after each construction season for the purpose of developing a reference library of instream and riparian habitat characteristics.

B. The Corps and SCVWD should prepare and implement a Mitigation and Monitoring Plan to address the replacement and reestablishment of riparian vegetation (including SRA cover) and instream habitat functions. The pan should also describe maintenance procedures to protect and enhance the riparian system. The Mitigation and Monitoring Plan should include offsite SRA mitigation that could expand the existing range of steelhead in the watershed. The plan should be submitted to NMFS for review and approval before initiating construction. NMFS shall provide in writing either concurrence with the plan or notification to the Corps and SCVWD that plan modifications are necessary for acceptance.

C. The Corps and SCVWD should incorporate an adaptive management process to insure that monitored indicators of measurable objectives are fully met and, if necessary, appropriate remedial actions are taken to ensure that agreed upon ecological functions and habitat values defined in the MMP and affected by the project are reestablished and maintained.

D. All mitigation areas that have been set aside as compensation for project impacts resulting from this project or any other project should not be disturbed or impacted during construction activities and should be preserved in perpetuity and not used as mitigation for other projects.

E. The Corps and SCVWD should prepare and implement a Vegetation Protection Plan to prevent the inadvertent loss of riparian vegetation above and beyond that necessarily resulting from project construction activities. The plan should also describe remedial actions required if preserved trees are inadvertently impacted by construction activities. The plan should be submitted to NMFS for review and approval before initiating construction. NMFS shall provide in writing either concurrence with the plan or notification to the Corps and SCVWD that plan modifications are necessary for acceptance.

3. (Not included)

4. The following Terms and Conditions implement Conservation Recommendation No. 4.

   A. Erosion control and sediment detention devices should be incorporated into the project and implemented at the time of the project action. These devices should be in place during the project action, and after if necessary, for the purpose of minimizing fine sediment and sediment/water slurry input to flowing water. The devices should be placed at all locations where the likelihood of sediment input exists.

   B. At the time of the project action, the Corps and SCVWD should prepare and implement a Storm Water Pollution Prevention Plan as part of the National Pollutant Discharge Elimination System (NPDES) to avoid or minimize increased sediment and turbidity impacts. This plan should be reviewed and approved by NMFS prior to construction.

   C. The Corps and SCVWD should prepare and implement an Erosion and Sediment Control Plan for minimizing the potential for sediment input into the stream, a Toxic Material Control and Spill Response Plan for preventing toxic material spills, a Soil Management Plan that provides criteria for classifying wastes in soil and managing soils possibly contaminated with mercury and methyl mercury concentrations and a Hazardous and Toxic Materials Contingency Plan in the event that unlisted hazardous and toxic sites are uncovered during construction.

   D. The Corps and SCVWD should fully cooperate with state and federal agencies involved with mercury contamination issues to insure that actions involving the flood control project including mitigation issues are compatible and conducted in a cooperative manner with potential mercury contamination cleanup actions.

   E. All water within the construction site should be pumped off-site or into a settling basin or tank and not directly into the downstream channel.

   F. All pilings, support piers, abutments and rock materials should be non-toxic. Any combination of wood, plastic, concrete, or steel is acceptable, provided that there are no toxic coatings, chemical antifouling products, or other treatments that may leach into the surrounding environment.

5. The following Terms and Conditions implement Conservation Recommendation No. 5.

   A. The Corps and SCVWD should provide a written monitoring report to NMFS within 30 working days following completion of each construction season (no later than November 30). The report should include the number and size of chinook salmon killed or injured during the project action and biological monitoring; any effect of the project action on chinook salmon habitat that was not previously considered; photographs documenting compliance with Reasonable and Prudent Measures No. 1, 2, and 4; and, photographs taken before and after work activity.

B. The Corps and SCVWD should provide a written report describing results of their mitigation activities to NMFS on a schedule that is developed in the Mitigation and Monitoring Plan. At the very minimum, the report should include a description of the locations planted or seeded, the area (ft^2) revegetated, a plant palette, planting or seeding methods, performance or success criteria, and pre- and post-planting color photographs of the revegetated area.

C. The Corps and SCVWD should provide a written report describing results of their Vegetation Protection Plan to NMFS on a schedule that is developed during the adoption of the plan.

D. All reports, proposed plans, and annual updates should be submitted to: Protected Resources Division Supervisor, NMFS, 777 Sonoma Ave., Room 325, (707) 575-6050, Fax (707) 578-3435.

Should these EFH conservation recommendations be implemented, significant improvements to the potential EFH of chinook salmon in the Guadalupe River are expected, and adverse impacts to their potential EFH would be mitigated.

VI. CORPS STATUTORY REQUIREMENTS

The Magnuson-Stevens Act and Federal regulations (50 CFR Sections 600.920) to implement the EFH provisions of the MSFCMA require federal action agencies to provide a written response to EFH Conservation Recommendations within 30 days of their receipt. Because the EFH designations for Pacific salmon have yet to be approved, this regulation does not apply until approved by the Secretary of Commerce at which time the 30 day period will commence. A preliminary response is acceptable if final action cannot be completed within 30 days. The Corps final response must include a detailed description of measures proposed to avoid, mitigate, or offset the adverse impacts of the activity. If the Corps response is inconsistent with our EFH Conservation Recommendations, the Corps must provide an explanation of the reasons for not implementing them.

References

Chapman, W.M. and E. Quistdorff. 1938. The food of certain fishes of north central Columbia River drainage, in particular, young chinook salmon and steelhead trout. Wash. Dept. Fish. Biol. Rep. 37-A:1-14.

Healey, M.C. 1991. Life history of chinook salmon. *In* C. Groot and L. Margolis: Pacific Salmon Life Histories. University of British Columbia Press. pp. 213-393.

Kjelson, M.A., P.F. Raquel, and F. W. Fisher. 1982. Life history of fall-run juvenile chinook salmon, *Oncorhynchus tshawytscha*, in the Sacramento-San Joaquin estuary, California, p. 393-411. *In*: V.S. Kennedy (ed.). Estuarine comparisons. Academic Press, New York, NY.

Myers, J.M., R.G. Kope, G.J. Bryant, D. Teel, L.J. Lierheimer, T. C. Wainwright, W.S. Grant, F.W. Waknitz, K. Neely, S.T. Lindley, and R.S. Waples. 1998. Status review of chinook salmon from Washington, Idaho, Oregon, and California. U.S. Dept. Of Commerce, NOAA Tech Memo. NMFS-NWFSC-35, 443p.

National Marine Fisheries Service (NMFS). 1997. Proposed recovery plan for the Sacramento River winter-run chinook salmon. NMFS, Southwest Region, Long Beach, California. 288 p. plus appendices.

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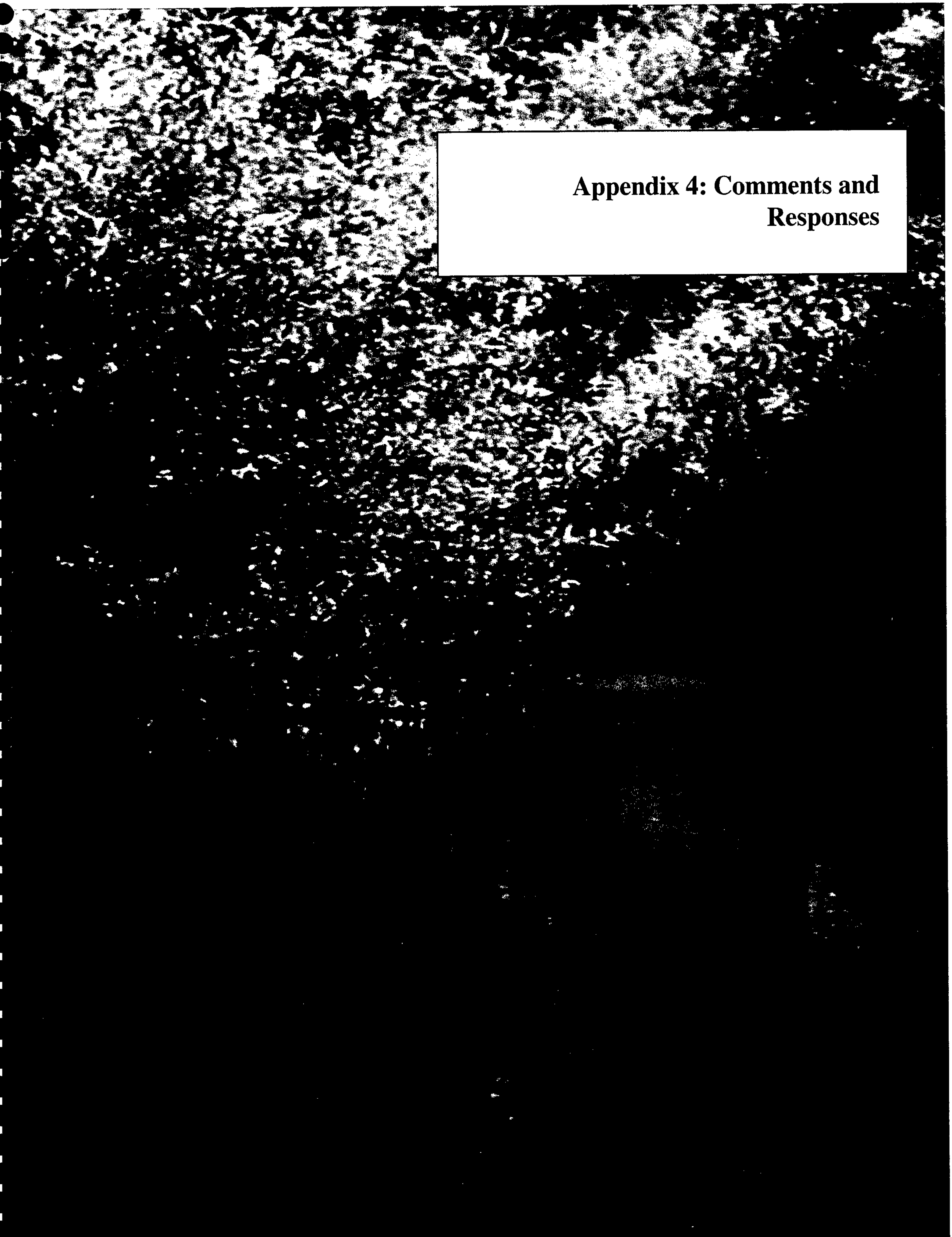
Pacific Fishery Management Council (PFMC). 1999. Description and identification of essential fish habitat, adverse impacts and recommended conservation measures for salmon. Amendment 14 to the Pacific Coast Salmon Plan, Appendix A. PFMC, Portland, OR.

Santa Clara Valley Water District and Army Corps of Engineers. 1998. Administrative final, Environmental impact report/environmental impact statement for the Upper Guadalupe River Flood Control Project, Vol VI. K\WP\1998\Project\732840\FEIR-V6.

Ulmer, L. 1988. Anadromous fish species utilization of Guadalupe River and Coyote and Penetencia Creeks, Santa Clara County (1986-87). Unpublished file report. California Department of Fish and Game, Region 3. Yountville. 9pp + map.

U. S. Fish and Wildlife Service. 1998. Fish and Wildlife Coordination Act Report for the Guadalupe River Flood Control Project, Upper Reaches. USFWS, Division of Ecological Service, Sacramento, CA.

Appendix 4: Comments and Responses



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Chapter 4. Special Interest Groups – Comments and Responses

Chapter 5. Individuals – Comments and Responses

Chapter 6. Public Hearing – Comments and Responses

CHAPTER 1

Introduction

CHAPTER 1

Introduction

This document presents comments submitted by Federal, State, and local agencies; interest groups; and the public on the Draft Integrated General Re-Evaluation Report/ Environmental Impact Report/Supplemental Environmental Impact Statement (Draft EIR/SEIS) for Proposed Modifications to the Guadalupe River Project, Downtown San Jose, California. This document also presents responses to comments. NEPA and the CEQA require the Federal and State lead agencies to respond to comments received during the public comment period. This document has been prepared in accordance with these requirements.

The Draft EIR/SEIS, prepared for the Corps and SCVWD, was distributed to the public and regulatory agencies on June 26, 2000. The comment period closed on August 9, 2000.

The Corps and SCVWD received both written and oral comments on the Draft EIR/SEIS. The Corps and SCVWD received written comments from Federal, State, and local agencies; interest groups; and the public. The Corps and SCVWD also conducted a public hearing on the Draft EIR/SEIS on July 26, 2000, in San Jose, California. Three members of the public submitted oral comments at the public hearing. Table 1-1 lists the agencies, groups, and members of the public who submitted written or oral comments.

Chapters 2 through 6 contain comment letters that are followed by individual responses to the comments raised. Chapter 6 contains a transcript of the public hearing followed by responses to the oral comments made at the hearing. The responses generally clarify information in the Draft EIR/SEIS; however, they occasionally include changes or additions to the text. In the Final EIR/SEIS, additions are indicated by shaded text (additions), and deletions are indicated by struck-out text (~~deletions~~). Responses that include changes to the Draft EIR/SEIS indicate the page number and section of the changed text.

This document is organized as follows:

- Chapter 1. Introduction
- Chapter 2. Federal Agencies – Comments and Responses
- Chapter 3. State and Local Agencies – Comments and Responses
- Chapter 4. Special Interest Groups – Comments and Responses
- Chapter 5. Individuals – Comments and Responses
- Chapter 6. Public Hearing – Comments and Responses
- Chapter 7. References
- List of Acronyms and Abbreviations

TABLE 1-1. List of Comments

Classification	Commentor	Organization	Date
FEDERAL AGENCIES			
EPA	David Farrel	U.S. Environmental Protection Agency	8/9/00
NMFS	Rebecca Lent	National Marine Fisheries Service	9/19/00
USDOI	Patricia Sanderson Port	U.S. Department of the Interior, Office of the Secretary, Office of Environmental Policy and Compliance	7/31/00
USFWS	Dale A. Pierce	U.S. Fish and Wildlife	8/9/00
STATE AND LOCAL AGENCIES			
CSC	Jane Mark	County of Santa Clara, Environmental Resources Agency	8/9/00
CSJ	Cindy Chavez	San Jose City Council	8/9/00
CT	Harry Y. Yahata	California Department of Transportation	7/31/00
GCRCD	Richard Roos-Collins and Staci Li	Guadalupe – Coyote Resource Conservation District, et al.	9/6/00
GCRCD2	Richard Roos-Collins	Guadalupe – Coyote Resource Conservation District, et al.	10/00
RASJ	Frank Fiscalini	City of San Jose, Redevelopment Agency, Guadalupe River Park Task Force	8/9/00
RWQCB	Khalil E. Abu-Saba	California Regional Water Quality Control Board	8/9/00 & 11/14/00
SC	Gustavo Gomez	City of Santa Clara, Engineering Department	7/28/00
SCVWD	David J. Chesterman	Santa Clara Valley Water District	8/9/00
SJ	Janis Moore	City of San Jose, Department of Planning, Building and Code Enforcement	8/9/00
TSC	Barbara J. Cook	Department of Toxic Substances Control	8/3/00
VTA	Derek A. Kantar	Santa Clara Valley Transportation Authority	8/8/00
SPECIAL INTEREST GROUPS			
BAI	James A. Benshoof	Benshoof & Associates, Inc.	10/4/00
GRPG	James E. Towery	Guadalupe River Park & Gardens	8/4/00
SJWC	Michael S. Asahina	San Jose Water Company	7/14/00
UP	Andrew L. Faber	Berliner Cohen	8/9/00
INDIVIDUALS			
JOHMANN	Larry Johmann	Individual	8/14/00
LUCAS	Libby Lucas	Individual	8/7/00
LUCAS2	Libby Lucas	Individual	8/14/00
PIZZO	Patrick P. Pizzo	Individual	Unknown
SOBRATO	William E. Burns	Sobrato Development Companies	7/31/00
PUBLIC HEARING			
PH	William J. Garbette	Individual	7/26/00
PH	M.J. Lowe-Peyton	Individual	7/26/00
PH	Jim Towery	Guadalupe Park and Garden	7/26/00

CHAPTER 2

Federal Agencies

August 9, 2000

Nina Bicknese, Project Manager
Sacramento District
U.S. Army Corps of Engineers
1325 "J" Street
Sacramento, California 95814

Dear Ms. Bicknese:

The U.S. Environmental Protection Agency (EPA) has reviewed the Draft Supplemental Environmental Impact Statement/Environmental Impact Report (DSEIS/EIR) for ***PROPOSED MODIFICATIONS TO THE GUADALUPE RIVER PROJECT, DOWNTOWN SAN JOSE, Santa Clara County, California*** (CEQ # 000193. # DS-COE-K36083-CA). Our comments are provided under the National Environmental Policy Act (NEPA), Section 309 of the Federal Clean Air Act, and the Council on Environmental Quality's (CEQ) NEPA Implementing Regulations (40 CFR 1500-1508). This DSEIS/EIR supplements a 1985 environmental statement prepared by the Corps of Engineers for the Authorized Project. On July 26, 2000 EPA met with the Corps, the Regional Water Quality Control Board and the U.S. Fish and Wildlife Service to discuss the proposal (National Marine Fisheries Service and California Department of Fish and Game participated via conference call).

The multi-purpose Guadalupe River Project is under phased construction in downtown San Jose. Approximately half the project has been completed, but not yet operational. The DSEIS/EIR addresses the environmental impacts associated with proposed *modifications* to the Federally-authorized Guadalupe River Project in downtown San Jose. The Corps developed modifications to the authorized project to (1) provide 100-year flood protection for downtown San Jose; (2) protect species recently listed under the Endangered Species Act; (3) meet conditions for State water quality certification under the Clean Water Act; and (4) further improve recreational opportunities along the river corridor. The modifications address mitigation measures along 2.6 miles of the Guadalupe River and two offsite mitigation areas. When all phases are completed, the project is designed to provide a 100-year level of flood protection for the downtown and surrounding areas, while avoiding, minimizing and/or mitigating adverse project effects on fish and wildlife resources, especially Federally-listed species.

EPA-1

Construction of the Authorized Project's flood control components was stopped in 1996 due to concerns regarding the adequacy of the project mitigation, new and proposed listings under the Endangered Species Act, and receipt of a notice of intent to sue from four environmental organizations. As a consequence of these changed circumstances, the Corps and the Santa Clara Valley Water District (SCVWD) established a collaborative framework to resolve disputes on *mitigation* for this project. Others in the dispute resolution process included the City of San Jose, the San Jose Redevelopment Authority, the U.S. Fish and Wildlife Service, the National Marine Fisheries Service, the California Department of Fish and Game, the State Water Resources Control Board, the Regional Water Quality Control Board, the Guadalupe-Coyote Resource Conservation District, Trout Unlimited, and the Pacific Coast Federation of Fishermen's Associations.

We commend the Corps, the SCVWD and others involved in the dispute resolution framework since their efforts resulted in project modifications reflecting two key Federal requirements, the Clean Water Act (CWA) and the Endangered Species Act (ESA). We are pleased to see these project refinements in the DSEIS/EIR and believe that the collaborative efforts have yielded a modified project which is a substantial improvement over that depicted in the 1985 EIS.

EPA-1

We are, however, seriously concerned regarding effects on the aquatic environment (including South San Francisco Bay) associated with the potential release of mercury-contaminated sediments. The Corps, on July 26, candidly recognized the need for a more complete analysis of issues related to mercury contamination prior to issuing its Final EIS (FEIS), a position which EPA supports and commends. The Guadalupe River has been designated by EPA as an impaired water body under the CWA, and appropriate mechanisms are being developed to address this problem. The DSEIS/EIR acknowledges that it is "difficult to predict" if the Proposed Action would increase exposure of mercury in sediments, an issue of significant concern to EPA under the CWA. The DSEIS/EIR acknowledges that an unresolved issue for the project hinges on State water quality certification under CWA Section 401 due to increases in mercury resulting from construction "in excess of maximum levels allowed in the regional water quality basin plan." We believe it is incumbent upon the Corps to proceed with a Federal civil works project only when it clearly, fully comports with Federal statutory requirements such as the CWA.

We are also quite concerned with the degradation and loss of habitat (wetlands, riparian areas) in the Guadalupe River watershed. We believe that further opportunities may be available to the Corps to avoid/minimize additional loss of riparian areas in connection with the construction of this project, as well as opportunities to restore previously-damaged areas as an element of mitigation for this project.

EPA-2

Based upon our review of the document and in light of the discussions on July 26, we assign a rating of EC-2, Environmental Concerns - Insufficient Information. Please refer to the attached "*Summary of Rating Definitions and Follow-Up Action*" for a more detailed explanation of EPA's rating system and to our attached comments on the DSEIS/EIR. We appreciate the opportunity to have been briefed by the Army Corps on the proposal and to

EPA-3

provide comments on the SDEIS/EIR. Please send one copy of the FEIS to me at the letterhead address (code: CMD-2) when it is filed with EPA's Washington, D.C. office. If you have any questions, please call me or David Tomsovic of my staff at 415-744-1575.

Sincerely,

David Farrel, Chief
Federal Activities Office

Enclosures:
(1) "Summary of Rating Definitions and Follow-Up Action"
(2) Detailed EPA Comments on DSEIS/EIR

cc:Terry Neudorf, SCVWD, San Jose
Mark Littlefield, F&WS, Sacramento
Mark Helvey, NMFS, Santa Rosa
Khalil Abu Saba, RWQCB, Oakland
Carl Wilcox, CDF&G, Yountville

WATER QUALITY

Sediment Control Trap to Reduce Mercury Loading to the Bay

The meeting held at EPA on July 26, 2000 regarding the project yielded a fruitful discussion of mercury contamination in the Guadalupe River Basin (including mercury in sediments), how flood control efforts along the River may affect the transport of mercury-contaminated sediments to South San Francisco Bay, and potential opportunities to control mercury as part of this project. A key point raised at the July 26 meeting is that this project offers a potentially significant opportunity for the Army Corps and the Santa Clara Valley Water District (SCVWD) to control (manage) the transport of mercury-contaminated sediments that eventually enter South San Francisco Bay, hopefully eliminating such contaminants from the Bay environment. The Corps expressed a willingness to evaluate the *feasibility* of a sediment control trap or other mechanism to reduce the amount of mercury-contaminated sediments entering the Bay. The project area from I-880 to Coleman Avenue was identified as a potential location for a sediment control trap or similar mechanism at the July 26 meeting. EPA-4

We appreciate the Army Corps' willingness to evaluate if this project can be designed, built and operated in a manner that reduces mercury loading into the Bay. We commend the Regional Water Quality Control Board, San Francisco Bay Region for its July 26 offer to assist the Corps in this regard. We strongly recommend that the Final EIS (FEIS) evaluate the feasibility of designing, building and operating the project in a manner that reduces, as fully as possible, the loading of mercury into the Bay.

As mentioned by EPA on July 26, an increasing number of Corps' civil works EISs have an "environmental restoration" component which reflects the Department of the Army's public commitment to environmental stewardship and environmental leadership. In several respects the DSEIS/EIR already recognizes the environmental sensitivity of areas and attempts to minimize impacts (e.g., efforts to protect anadromous fish species by providing cooler water temperatures). We believe that an effort to reduce mercury loading to the Bay would serve as a strong compliment to the efforts depicted in the DSEIS/EIR to improve fish and wildlife habitat and protect established beneficial uses. It would be in accord with the Council on Environmental Quality's (CEQ) requirement for Federal agencies to use "*all* practicable means . . . to restore and enhance the quality of the human environment and avoid or minimize *any* possible adverse effects of their actions upon the quality of the human environment." (40 CFR 1500.2(f), italics added). EPA-5

In terms of analyzing impacts under NEPA, the FEIS should evaluate, in comparative fashion, the impacts (advantages and disadvantages) of removing these sediments from the Guadalupe River watershed and the Bay environment, as well as impacts from disposing the sediments at an approved facility. The view was expressed at the July 26 meeting that the sediments would be sent to an approved disposal facility outside the Guadalupe River Watershed. Because we presume that sediments would be de-watered prior to off-site disposal, the FEIS should address any impacts associated with de-watering. EPA-6 Please note that the sediment control trap or similar mechanism should not be located (if at all practicable) in waters of the United EPA-7

States, in part because the component facility would require maintenance that would be a continuing impact on waters of the United States.

EPA-7

Significance of Mercury-Contaminated Sediments Re-suspended into Environment by Project

EPA-8

Volume 1 (page 5-21) discusses the potential transport of mercury in the Guadalupe River that could be affected by construction and operation of the project. Page 5-21 informs the reader how "it is difficult to predict whether the Proposed Action would increase exposure of mercury in bedload sediments." However, this same page asserts that construction and operational water quality effects from disturbance of mercury in channel sediments "would be less than significant." It is perplexing why the DSEIS/EIR can say it is "difficult to predict" mercury-related impacts but then assert that such effects "would be less than significant," while not providing substantiation of the assertion regarding the (in)significance of mercury-related impacts. The conflicting statements on page 5-21 are further complicated by wording in Volume 1 (page S-11) that indicates that one unresolved issue for this project is State water certification under Section 401 of the Clean Water Act (CWA) due to "increases in mercury resulting from construction in excess of maximum levels allowed in the regional water quality basin plan."

Such discrepancies should be clarified in the FEIS. From the perspective of disclosing impacts under NEPA, the FEIS should indicate whether construction and/or operation of the project would result in increases in mercury (whether or not such releases would be above or below applicable State regulatory limits) and, if so, effects upon the environment, including effects on fish/wildlife and water quality.

EPA-9

The FEIS should also address if such releases would be consistent with the requirements of the regional water quality basin plan, and, if not, how the project would be modified or revised to ensure consistency with applicable standards found in the basin plan. The basin plan was developed by the Regional Water Quality Board and approved by U.S. EPA under authority of the CWA.

Information on Mercury Contamination in the Guadalupe River Watershed

EPA-10

We recommend that the FEIS provide a discussion of mercury contamination in the watershed, including information on mercury contamination in Guadalupe River watershed sediments and a discussion regarding efforts to identify and/or remediate such contamination by local/State/Federal authorities.

Clean Water Act Section 313

EPA-11

CWA Section 313(a) provides that a Federal agency engaged in "any activity" resulting in the discharge or runoff of pollutants shall comply with all applicable Federal and State requirements to the same extent as a private party. The statement in the DSEIS/EIR that the project could result in mercury levels "in excess of maximum levels" found in the regional water quality basin plan would be inconsistent with the wording found in CWA Section 313(a). The FEIS should acknowledge the need for the project to be consistent with CWA Section 313.

Effects of Project Upon River Morphology and Riparian Areas

EPA-12

We appreciate that the Corps and the SCVWD propose bypass channels as the preferred method of flood control. We are concerned, however, about the proposed project and its affect upon the river's morphology and riparian areas. We understand that the proposed project will cause an overall increase in sediment deposition with areas of localized scouring. We are concerned that the planning level analysis of sediment deposition may have not fully considered the effect of different storm events (10-, 50- or 100-year) on overall sediment loading in the Guadalupe River. We recommend that the FEIS analyze this issue. As a matter of public disclosure under NEPA, it would be beneficial for the FEIS to address the overall change in sediment to the system as a result of building and operating the proposed project (including any capture of mercury-contaminated sediments and their disposal outside the Guadalupe River watershed). Any changes to sediment loading should be calculated annually and then considered over the life of the project (100 years), including any impacts that may be reasonably foreseeable with decreased (or increased) sediment loading.

Control of Sediment Deposition

EPA-13

We are concerned about the use of invert stabilization structures and/or check dams to control sediment deposition in the Guadalupe River. The use of these structures may have impacts requiring analysis and public disclosure under NEPA. For example, use of such stabilization structures can affect downstream reaches by causing headcutting of streams and/or further destabilization of the reach.

EPA-14

As discussed on July 26, we suggested that the level of the bypass inlets be constructed to allow minor changes in elevation. We believe this approach may be an appropriate solution which should be addressed in the FEIS.

EPA-15

We are concerned that the project anticipates a continued loss of gravel in the channel bottom and proposes to replace the gravel. We assume this loss to be a one-time event. If it is anticipated to occur more frequently, the impacts of mining the gravel and transporting and placing it at the site should be addressed in the FEIS.

Loss of Riparian Habitat and Adequacy of Mitigation

EPA-16

As discussed at the July 26 meeting, EPA is seriously concerned about the cumulative loss of riparian vegetation in Santa Clara County. It appears that the proposed project will result in direct loss of almost 2.0 miles (9,373 linear feet) of bank and almost 1.0 mile of channel bottom (4,433 linear feet) from armoring. The project will also directly impact 15.3 acres of riparian vegetation. In discussions between EPA and the SCVWD regarding their maintenance permit, their analysis indicated that loss of riparian vegetation from bank stabilization activities was a significant cumulative adverse impact. We support efforts to ensure that riparian mitigation commences before adverse impacts occur. However, we remain concerned that the proposed mitigation may not adequately offset the impacts. A number of riparian restoration/mitigation projects have not been fully successful, which gives rise to our concerns regarding this proposal. We note that most of the mitigation for this proposal would be at an off-site location by Guadalupe Creek. While we recognize that an insufficient area exists at the project site to perform mitigation, off-site mitigation typically requires a higher compensation ratio. In addition, conditions at the Reach A mitigation site are less than desirable for mitigation. For example, it appears that the area would have no buffer zone and it is unclear whether regular maintenance of the vegetation would be needed. These issues should be

clarified in the FEIS.

We are concerned that the proposed planting would not replace the same functions that are projected to be lost due to bank armoring. Given the projected loss of riparian areas, increasing the density of vegetation by infilling with riparian plantings would not satisfactorily offset the total loss of jurisdictional acreage and the loss of restorable riparian habitat. We recommend that the Corps and the SCVWD evaluate the feasibility of removing rip-rap along an equivalent length of creek and adopting more environmentally benign flood control features. Lastly, although we strongly support the need to provide suitable water temperatures and rearing/spawning habitat for native fisheries, we are concerned that this may be at the expense of other types of habitat which are already fragmented and subject to degradation. Opportunities should be utilized to improve fishery conditions and protect riparian habitat to the fullest extent possible, not only in connection with this proposal but with other actions undertaken by the Corps and the SCVWD in the Guadalupe River watershed. EPA-17

SEGMENTS 1-2 AND NO ACTION

Segments 1 and 2 of the project have already been built with impacts resulting to eight (8) acres of riparian vegetation and 4000 linear feet of shaded riverine aquatic (SRA) habitat. We recognize that the DSEIS/EIR included these impacts as part of the "No Action" alternative. However, it may provide more clarity if the FEIS defined an environmental baseline which would assume that no impacts from any portion of the project had occurred. EPA-18

CUMULATIVE IMPACTS

1. The DSEIS (at 6.2.1) identifies nine (9) projects that are assessed in Chapter 6 on cumulative impacts. As discussed at the July 26 meeting, at least three other projects or activities in the Guadalupe River Watershed should be addressed in the cumulative impacts analysis. These are: (1) flood control and/or stream maintenance activities undertaken by the Santa Clara Valley Water District, the Corps or other parties; (2) mercury environmental restoration efforts by local, State or Federal authorities; and (3) commercial/residential/mixed use and other developments approved by local authorities under the California Environmental Quality Act. EPA-19

2. The DSEIS does not appear to reflect guidance issued to Federal agencies by the Council on Environmental Quality, ***Considering Cumulative Effects Under the National Environmental Policy Act*** (1997). We strongly recommend that, for each impact area, the Corps re-examine the project's cumulative impacts in light of CEQ's guidance to Federal agencies. EPA-20

EDITORIAL COMMENTS

1. Volume 1 (page S-20) indicates that the Army Corps will be responsible for the short-term (3-year) monitoring results while the SCVWD will be responsible for annual reporting for years 4-100. The FEIS/R should clarify how it would be feasible to ensure that this commitment is carried out for such an extended period of time. EPA-21

2. We recommend that the FEIS identify the various sources of mercury contamination in the Guadalupe River Watershed. It appears that Figure 1.0-2 (map of watershed) may be a useful tool to depict this information. EPA-22

3. Volume 1 (Section 1.5, Consultation and Other Requirements) addresses various regulatory requirements associated with the proposal. Section 1.5.1.4 addresses two specific elements of the CWA as they apply to the project: Section 404 and Section 401. There is no specific discussion in Section 1.5.1.4 regarding CWA Section 402 permits (National Pollutant Discharge Elimination System, NPDES). Section 402 may apply to the proposal, specifically, NPDES requirements on stormwater construction and discharges of pumped groundwater during construction to waters of the United States. We recommend that CWA Section 402 issues be incorporated in the discussion in Section 1.5.1.4. EPA-23

4. The FEIS should address whether the SCVWD's maintenance permit would apply once the project has been fully built or whether a separate maintenance plan would be developed and implemented. EPA-24

5. It is unclear if EPA was formally invited to participate in the collaborative process to date. This should be clarified in the FEIS. EPA Region IX's Water Division would be pleased to be a participant in future collaborative efforts. Please contact Rebecca Tuden at 415-744-1587 regarding future participation by EPA in the collaborative process. EPA-25

SUMMARY PARAGRAPH FOR HQ OFA, MODIFICATIONS TO THE GUADALUPE RIVER PROJECT, DOWNTOWN SAN JOSE, CA.

EPA expressed environmental concerns regarding effects on the aquatic environment associated with

the potential release of mercury-contaminated sediments and with the degradation and loss of wetlands and riparian habitat in the Guadalupe River watershed. EPA urged the Corps and the local project sponsor to avoid and minimize such impacts to the fullest extent and identify appropriate mitigation measures.

U.S. ENVIRONMENTAL PROTECTION AGENCY, FEDERAL ACTIVITIES OFFICE, DAVID FARREL (AUGUST 9, 2000)

Response to Comment EPA-1

The Corps and SCVWD appreciate the time and effort spent by EPA to meet with representatives of involved agencies and to review the EIR/SEIS. For specific responses to EPA's concerns regarding the potential release of mercury-contaminated sediments and compliance with CWA Section 401, see Responses to Comments EPA-4 through EPA-11.

Response to Comment EPA-2

Offsite riparian (SRA cover vegetation) mitigation has been maximized to the greatest extent feasible based on available land areas that are not already being considered by other flood protection projects along the Guadalupe River. (For information pertaining to other flood protection projects and associated mitigation packages in the Guadalupe River watershed (Section 6.2, "Cumulative Impacts – Bypass System Alternative and Other Guadalupe River Projects"). Based on the results of the HEP analysis, USFWS and NMFS consider the SRA cover vegetation mitigation to be adequate (Section 5.4.3.2, "Shaded Riverine Aquatic Cover Vegetation"). Based on the results of thermal modeling, additional riparian mitigation in the upper watershed would not result in decreased water temperatures in the project area.

The current project design for the Bypass System Alternative has minimized, to the greatest extent feasible, riparian and SRA cover vegetation impacts.

Onsite riparian (SRA cover vegetation) mitigation opportunities are being maximized to the greatest extent feasible based on existing conditions, proposed project features, and hydraulic constraints.

Response to Comment EPA-3

Comment noted.

Response to Comment EPA-4

Construction activities and project features associated with the Bypass System Alternative would reduce the potential for mercury-laden sediments to be mobilized in the Guadalupe River. These activities include careful management of soil and water quality during construction and operation. Erosion and bank stability monitoring, armoring of portions of the river channel and planting riparian vegetation will also contribute to water quality management. These project commitments and design elements as they relate to mercury management are summarized below and discussed in greater detail in the revised Section 5.3.3.3, "Toxic Constituents – Mercury."

During project construction, construction-related erosion and sedimentation would be managed through implementation of an erosion and sediment control plan. As described in Section 3.4.3, "Environmental Commitments," the erosion and sediment control plan would outline procedures and policies to avoid and minimize the discharge of sediment to the Guadalupe River during construction activities. As described in Section 3.4.3, elements of the erosion and sediment control plan would require contractors to:

- conduct all construction work in accordance with site-specific construction plans that minimize the potential for sediment input to the stream
- identify, with construction fencing, all areas that require clearing, grading, revegetation, or recontouring and minimize the extent of areas to be cleared, graded, or recontoured
- grade spoil sites to minimize surface erosion and apply erosion control measures as appropriate to prevent sediment from entering water courses or the stream channel, to the extent feasible
- mulch disturbed areas as appropriate and plant with appropriate species as soon as practicable after disturbance
- avoid operating equipment in flowing water by using temporary cofferdams or some other suitable diversion to divert channel flow around the channel and bank construction area

In addition, a soil management plan would be implemented for the Guadalupe River Project with Bypass System Alternative that would provide procedures for classifying soils, as well as procedures and criteria for disposal and reuse. Prior to project implementation, the soil management plan will be updated to reflect final project design and to incorporate input from RWQCB regarding management of soils containing elevated mercury concentrations. The updated soil management plan will be submitted to RWQCB for approval prior to implementation.

The following restrictions on soil management would be included in the soil management plan submitted to RWQCB for approval:

- Sediments with mercury concentrations that exceed hazardous waste criteria under federal or state law must be disposed offsite in appropriately licensed disposal sites. The determination of hazardous properties shall comply with all applicable statutes and regulations pertaining to hazardous wastes.
- Excavated soils with mercury concentrations not exceeding hazardous waste criteria, but greater than 1 mg/kg, may not be reused onsite unless such soils are placed above the low flow channel or in adjacent areas where frequent exposure to overbank flow is not anticipated to occur; above the water surface elevation defined by the 3-year recurrence interval.
- Excavated surfaces above the 3-year recurrence interval elevation that contain mercury concentrations higher than hazardous waste levels will be overexcavated and replaced with soils meeting the above criteria for on-site reuse. Excavated surfaces below the 3-year recurrence interval elevation that contain mercury concentrations greater than 1 mg/kg will be overexcavated and replaced with clean imported soil.

- The limitations on onsite reuse of excavated soils and sediments would also apply to operation and maintenance activities throughout the life of the proposed project.

The 1 mg/kg requirement is based on regulatory guidance from RWQCB (California Regional Water Quality Control Board, 2000), which states that reducing bank sediment concentrations of mercury to 1 mg/kg or less will reduce water column concentration of total recoverable mercury. Water quality in the project area presently exceeds Basin Plan numeric water quality objectives for mercury. Therefore, incorporation of the proposed soil reuse restrictions would result in improved water quality under postproject conditions.

During operation of the project, project elements such as channel armoring and riparian vegetation plantings would further contribute to mercury transport management. Existing erosion during the operation of the project would be eliminated in areas of the river that would be armored and erosion would be reduced or eliminated in areas where riparian vegetation is planted. In addition, implementation of erosion control monitoring as part of the Mitigation Monitoring Program (Volume 2, Appendix 3, Section 4.3.4.7, "Bank Stability Indicator for SRA Cover," and Section 4.3.4.9, "Channel Bed Stability Indicator for SRA Cover") would provide a method of identifying areas of bank instability, erosion that would require subsequent remedial action. Control of operational erosion would also manage the transport of mercury bound to eroded sediments.

The Proposed Action will not have any affect on the mercury source and mercury input to the Guadalupe River system. Any removal of mercury from the river channel or erosion control could reduce the amount of mercury in the system. A reduction in the amount of mercury would be considered beneficial.

Future opportunities to capture and remove sediments containing mercury from the Guadalupe River watershed will be addressed through the TMDL (Section 4.3, "Water Quality"). The TMDL process will determine if the construction and operation of sediment traps throughout the watershed will help meet the goal of a 92 percent reduction in the amount of mercury entering the Bay from the Guadalupe River. A potential site that may be evaluated for use as a sediment trap is the floodplain terrace in Segments 1 and 2.

Response to Comment EPA-5

The Guadalupe River Project will be designed, built, and operated in a manner that reduces the loading of mercury into the Bay, eliminates or mitigates bioavailable mercury in sediments, and does not promote the offsite transport of mercury via migratory waterfowl, fish, or other mobile species.

As discussed in Response to Comment EPA-4 and in Section 5.3.3.3, "Toxic Constituents – Mercury", the Proposed Action includes commitments and design elements to minimize mercury loading to the San Francisco Bay and methyl mercury formation, including construction erosion control and soil management, erosion and sediment management during operation of the project, channel armoring, and riparian vegetation planting. The Proposed Action will minimize adverse effects on the environment while meeting the project objectives of providing flood protection to downtown San Jose.

Response to Comment EPA-6

The comment requests an analysis of the relative environmental benefits and impacts of sediment removal and disposal.

As discussed in greater detail in Response to Comment EPA-4, the Soil Management Plan has been appropriately modified based on comments received from the RWQCB (see also Response to Comment RWQCB-9). Soils from the channel containing mercury concentrations that exceed hazardous waste criteria must be disposed offsite at an appropriately licensed disposal site. Soil concentrations between 1 mg/kg the level that exceeds the hazardous waste criteria would be removed from the site and disposed of at an appropriately licensed disposal site unless the soils can be placed above the low flow channel or in adjacent areas where frequent exposure to overbank flow is not anticipated to occur; above the water surface elevation defined by the 3-year recurrence. Excavated surfaces above the 3-year recurrence interval elevation that contain mercury concentrations that exceed hazardous waste criteria will be overexcavated and replaced with soils meeting the above criteria for on-site reuse. Excavated surfaces below the 3-year recurrence interval elevation that contain mercury concentrations greater than 1 mg/kg will be overexcavated and replaced with clean imported soil.

Removal of mercury laden soils from the channel of the Guadalupe River would reduce the transportable mercury budget in the Guadalupe, thus contributing in part to a reduction in mercury loading to the San Francisco Bay. Based on early 1990 average sediment mercury concentrations for the project reach (Section 4.3.2, "Toxic Constituents," and Response to Comment EPA-10), sediment removal could constitute a reduction in mercury loading equal to 3 to 7 times the estimated annual load from all wastewater discharges in the entire San Francisco Bay. Hypothetically, if the 30,000 cubic yards of channel sediment that will be excavated as part of project construction had an average mercury concentration of that measured in the early 1990's (4.2 mg/kg) and were disposed out of the active channel or off-site, approximately 350 pounds (145 kg) or mercury would be removed from the Guadalupe River (Section 5.3.3.3, "Toxic Constituents – Mercury"). From RWQCB estimates, the annual wastewater load of mercury for the entire San Francisco Bay is 20 to 50 kg per year. The Soil Management Plan could have a significant beneficial impact on mass loading to the Bay.

Regarding possible mercury volatilization and leaching in landfill soils, the mercury in the sediments of the Guadalupe River is not in a volatile form. The mercury, therefore, would not be expected to volatilize into the atmosphere. The majority of mercury occurs as cinnabar (mercuric sulfide), which is relatively nonvolatile and water insoluble. Several sediment samples from the project area were subjected to the Waste Extraction Test (WET), an analytical procedure used to evaluate the propensity of wastes to leach from soils (CH2M HILL, 1995, CH2M HILL, 1994). Results of these tests for mercury suggested that mercury in Guadalupe River sediments is relatively insoluble and would not present a significant leaching hazard under simulated landfill conditions.

The transportation, air quality, and noise effects evaluated in the Draft EIR/SEIS assumed a worst-case analysis, where all excavated soils would be disposed of offsite. As discussed in Section 5.9, "Transportation and Traffic," Section 5.10, "Air Quality," and Section 5.11, "Noise," the proposed project would have a less-than-significant impact on these resources (Volume 1, pages 5-72 to 5-80).

Response to Comment EPA-7

Comment noted. SCVWD will participate in the TMDL process for mercury for the Guadalupe watershed (Section 6.2.4.3, Toxic Constituents – Mercury"). The SCVWD will coordinate with appropriate agencies regarding the need for and possible location of sediment control traps or similar mechanisms.

Response to Comment EPA-8 and EPA-9

The impact analysis and mitigation discussion has been rewritten to clarify effects on water quality. The impact determination of less than significant remains the same, although a program of project reach specific monitoring is recommended to further minimize the potential for increased mercury methylation.

The following change is made to the Draft EIR/SEIS:

Page 5-21. Starting with the first paragraph of Section 5.3.3.3, "Toxic Constituents – Mercury," the text is modified as follows:

5.3.3.3 Toxic Constituents – Mercury

The Guadalupe River, its tributaries, and South San Francisco Bay are classified as impaired with regard to mercury contamination under Section 303(d) of the CWA. As described in Sections 1.5.3.1, "San Francisco Bay Regional Water Quality Control Board and State Water Resources Control Board," and 4.3, "Water Quality," a draft TMDL program and implementation plan have been developed for San Francisco Bay calling for a ~~90~~ 92 percent reduction in the amount of mercury loading currently entering the bay from the Guadalupe River watershed.

The ~~Proposed Action~~Bypass System Alternative would not change the quantity or patterns of mercury that enters the project area from the watershed. However, because ~~mercury is largely associated with sediment, transport of mercury in the Guadalupe River could be affected~~of the association of mercury with soils and sediments (Section 4.3.2, "Toxic Constituents"), ~~by~~ project construction activities and long-term operations of the project could affect transport and methylation of mercury in the Guadalupe River. Therefore, the Bypass System Alternative could potentially affect mercury behavior by:

- increasing the transport and loading of mercury to the San Francisco Bay, and
- increasing the formation of methyl mercury in the project reach of the Guadalupe River.

Transport and Loading. Construction activities have the potential to disturb soil and sediments that contain mercury. Operation of the bypasses could cause scour and sediment deposition resulting in transport of mercury

associated with ~~the bedload sediments. Mercury-bearing sediments could be transported in either the suspended wash load or as bedload. Long~~bedload and washload sediments. In addition, long-term sediment removal operations could disturb substrate that contains mercury.

~~Removal of these sediments would be considered beneficial to water quality by eliminating exposure to aquatic organisms to mercury.~~

~~Any increase in the exposure of existing deposits of mercury-bound sediment to aquatic organisms is considered an adverse water quality effect. However, it is difficult to predict whether the Proposed Action would increase exposure of mercury in bedload sediments. Exposure to mercury depends on many factors, such as the existing concentration of mercury in sediments that may be disturbed, the resulting patterns of erosion and deposition, and chemical factors affecting its solubility in the overlying water column.~~

~~The description of the Hazardous and Toxic Materials Contingency Plan in Section 3.4.3.1 includes information about the Soil Management Plan (CH2M HILL, 1994). The Soil Management Plan was developed for the project and includes measures to reduce the potential for adverse effects from mercury should it be detected in sediments disturbed by construction activities. These measures will ensure that material contaminated with mercury is not eventually transported back into the Guadalupe River system or into San Francisco Bay and will provide a means of quantifying the amount of mercury removed.~~

~~Determination: Construction- and operations-related water quality effects from disturbances of mercury in channel sediments would be less than significant. Implementation of Soil Management Plan procedures for monitoring and removal~~ During project construction, construction-related erosion and sedimentation would be managed through implementation of an erosion and sediment control plan. As described in Section 3.4.3, "Environmental Commitments," the erosion and sediment control plan would outline procedures and policies to avoid and minimize the discharge of sediment to the Guadalupe River during construction activities. As described in Section 3.4.3, elements of the erosion and sediment control plan would require contractors to:

- conduct all construction work in accordance with site-specific construction plans that minimize the potential for sediment input to the stream
- identify, with construction fencing, all areas that require clearing, grading, revegetation, or recontouring and minimize the extent of areas to be cleared, graded, or recontoured
- grade spoil sites to minimize surface erosion and apply erosion control measures as appropriate to prevent sediment from entering water courses or the stream channel, to the extent feasible

- mulch disturbed areas, as appropriate, and plant with appropriate species as soon as practicable after disturbance
- avoid operating equipment in flowing water by using temporary cofferdams or some other suitable diversion to divert channel flow around the channel and bank construction area

In addition, a soil management plan would be implemented for the Guadalupe River Project with Bypass System Alternative that would provide procedures for classifying soils, as well as procedures and criteria for disposal and reuse. Prior to project implementation, the soil management plan will be updated to reflect final project design and to incorporate input from RWQCB regarding management of soils containing elevated mercury concentrations. The updated soil management plan will be submitted to RWQCB for approval prior to implementation.

The following restrictions on soil management would be included in the soil management plan submitted to RWQCB for approval:

- Sediments with mercury concentrations that exceed hazardous waste criteria under federal or state law must be disposed offsite in appropriately licensed disposal sites. The determination of hazardous properties shall comply with all applicable statutes and regulations pertaining to hazardous wastes.
- Excavated soils with mercury concentrations not exceeding hazardous waste criteria but greater than 1 mg/kg may not be reused onsite unless such soils are placed above the low flow channel or in adjacent areas where frequent exposure to overbank flow is not anticipated to occur; above the water surface elevation defined by the 3-year recurrence interval.
- Excavated surfaces above the 3-year recurrence interval elevation that contain mercury concentrations higher than hazardous waste levels will be overexcavated and replaced with soils meeting the above criteria for onsite reuse. Excavated surfaces below the 3-year recurrence interval elevation which contain mercury concentrations greater than 1 mg/kg will be overexcavated and replaced with clean imported soil.
- The limitations on onsite reuse of excavated soils and sediments would also apply to operation and maintenance activities throughout the life of the proposed project.

The 1 mg/kg requirement is based on regulatory guidance from RWQCB (California Regional Water Quality Control Board, 2000), which states that reducing bank sediment concentrations of mercury to 1 mg/kg or less will reduce water column concentration of total recoverable mercury. Water quality in the project area presently exceeds Basin Plan numeric water quality objectives for mercury. Therefore, incorporation of the proposed soil reuse

restrictions would result in improved water quality under postproject conditions.

If the 30,000 cubic yards of channel sediment, which will be excavated as part of the Guadalupe River Project, were disposed out of the active channel or offsite, approximately 350 pounds (145 kg) of mercury would be removed from the Guadalupe River (Section 5.3.3.3, "Toxic Constituents"). This assumes the channel sediment has an average mercury concentration equal to that measured in the early 1990s (4.2 mg/kg). From RWQCB estimates, the annual wastewater load of mercury for the entire San Francisco Bay is 20 to 50 kg per year. Implementation of the Soil Management Plan could have a significant beneficial impact on mass loading to the Bay.

During operation of the project, project elements such as channel armoring and riparian vegetation plantings would further contribute to mercury transport management. Existing erosion during the operation of the project would be eliminated in areas of the river that would be armored and erosion would be reduced or eliminated in areas where riparian vegetation is planted. In addition, implementation of erosion control monitoring as part of the Mitigation Monitoring Program (Volume 2, Appendix 3, Section 4.3.4.7, "Bank Stability Indicator for SRA Cover," and Section 4.3.4.9, "Channel Bed Stability Indicator for SRA Cover") would provide a method of identifying areas of bank instability, erosion that would require subsequent remedial action. Control of operational erosion would also manage the transport of mercury bound to eroded sediments.

Determination: In addition to channel armoring and riparian vegetation planting, the implementation of erosion and sediment control, soil management, and mitigation monitoring plan would avoid and minimize the potential for increased transport and loading of mercury to the San Francisco Bay. Disturbance and subsequent transport of mercury-laden sediments and soils is an identifiable source of mercury loading to the San Francisco Bay. The erosion control measures contained in the erosion and sediment control plan and the Mitigation Monitoring Plan along with channel armoring and riparian vegetation planting could substantially manage project-related erosion, thereby minimizing project effects. Furthermore, the soil management plan would establish threshold criteria whereby mercury-laden soils would be removed from the channel. Together these measures could significantly contribute to the overall reduction in the available mercury that is mobile in the project reach. In particular, the implementation of a soil management plan (Section 3.4.3, "Environmental Commitments") could result in significant exports of mercury from project reaches to licensed disposal facilities. Therefore, the effects of construction- and operations-related transport and loading of mercury to the San Francisco Bay are considered less than significant.

Increased Methyl Mercury Formation. Any potential increase in the exposure of aquatic organisms to bioavailable mercury would be considered an adverse water quality effect of the Guadalupe River Project with Bypass System

Alternative. However, there is no evidence to suggest that operation of the Guadalupe River Project with Bypass System Alternative would increase aquatic organism exposure. To the contrary, the proposed project would discourage the development of instream conditions such as wetlands or other anoxic, high sulfate, low pH, and high organic matter aquatic environments that would be conducive to enhanced methylation. In addition, by creating a better defined low flow channel, the project would create more concentrated and less stagnant flows, thereby resulting in reduced anoxic conditions.

Determination: The Guadalupe River Project with Bypass System Alternative is not expected to increase the potential for formation of methyl mercury in the Guadalupe River watershed. Because stagnant or anoxic conditions would be avoided or minimized by concentrating flow in a defined low flow channel, the Guadalupe River Project with Bypass System Alternative would not be expected to increase the exposure of aquatic organisms to bioavailable methyl mercury. Therefore, increased methyl mercury formation is considered a less-than-significant adverse affect. However, SCVWD and the Corps would implement the following mitigation measure to minimize the potential for increased methylation and to provide valuable data for the TMDL effort on the Guadalupe River.

As part of the Guadalupe River watershed monitoring program specified as a mitigation component in Section 6.2.4.3 "Toxic Constituents – Mercury," SCVWD, in conjunction with RWQCB and other resource regulatory agencies, would develop and implement a program to monitor postproject changes in methylation rates in Segments 1, 2, and 3 and Reach A. Baseline monitoring would be conducted prior to project construction. Additional monitoring would be conducted for a period of 5 years.

A comparison of baseline and postconstruction data would show whether preconstruction levels of methyl mercury in the project reach have elevated above baseline conditions. If monitoring showed elevated methyl mercury concentrations, efforts would be conducted to determine conditions responsible for this increase. SCVWD would then consult with the RWQCB and other agencies to identify and implement additional measures to reduce controllable factors responsible for the observed elevation in methyl mercury.

The following change is made to the Draft EIR/SEIS:

Section 6.2.4.3, "Toxic Constituents – Mercury," is modified as follows:

6.2.4.3 Toxic Constituents – Mercury

As described in Section 1.5.3.1, "Regional and Local Requirements – San Francisco Bay Regional Water Quality Control Board and State Water Resources Control Board," and Section 4.3, "Water Quality," the San Francisco Bay RWQCB recently prepared a draft total maximum daily load (TMDL) program for mercury for San Francisco Bay (San Francisco Bay Regional Water Quality Control Board, 2000). The program calls for ~~a~~ significantly reducing the transport of mercury ~~to the bay~~ from the

Guadalupe River system to the bay. The San Francisco Bay RWQCB has determined that if the mercury load in the river system could be reduced to pre-Gold Rush era levels, it is highly probable that standards for mercury in the bay would be achieved.

Most of the mercury in the Guadalupe River watershed is ~~attached~~ bound to sediments and particulates. The sediments of greatest concern are those transported and deposited along the banks of the Guadalupe River when mercury-bearing ore was mined in the upper watershed during the Gold Rush.

Mercury concentrations can vary greatly in sediments from different areas of the Guadalupe River watershed. The potential for adverse environmental effects from sediment-bound mercury in the watershed depends on the source, transport, and deposition characteristics of such mercury.

Complex physical and chemical ~~properties of the sediment, as well as the solubility of mercury in the water column. A primary environmental concern is the potential for mercury in~~ conditions of the aquatic environment ~~to transform to dissolved forms that can be adsorbed~~, such as pH, organic carbon, and dissolved oxygen, can affect mercury methylation rates. Methylation of mercury is a significant concern because methylated forms of mercury can be absorbed readily by aquatic organisms, causing toxic reactions and tissue accumulation.

~~Methyl mercury can form in accumulated sediments by a process known as methylation~~. The methylation process depends on environmental conditions, such as pH, dissolved organic carbon, temperature, sulfates, and light. Many of these factors are affected by biological processes, such as growth~~, decay, and other metabolic processes. Since most methylation is affected by biological processes, it is likely that the rate and quantity of methyl mercury formation changes seasonally~~and decay.

Controlling sediment in the Guadalupe River is crucial for complying with the reduction in mercury levels recommended in the TMDL. Consequently, potential changes in sediment sources and ~~sediment~~ transport characteristics in the Guadalupe River system ~~caused by construction and operation of flood protection projects and other~~ resulting from projects in the watershed ~~must be evaluated. The operation~~are analyzed in this cumulative impact analysis. Operation of the proposed flood protection projects and the Guadalupe Creek Restoration Project would not change the amount or rate of sediments entering the Guadalupe River from sources such as surface runoff and storm drains. Also, the volume of mercury-bearing sediments entering the Guadalupe River from abandoned mines and other sites in the watershed upstream from the confluence of Guadalupe and Alamitos ~~would not be affected by~~Creeks occurs independent of the proposed flood protection projects or other projects in the Guadalupe River watershed.

As part of its ongoing maintenance activities, SCVWD periodically would remove bedload sediment that accumulates in the channel between Trimble Road and Montague Expressway. Sediment currently accumulates in this area and will continue to do so regardless of whether the project is constructed. As discussed in Section 6.2.3.2, "Cumulative Impacts – Operational Impacts," sediment transport studies for the Guadalupe River indicate that over 92 percent of the bedload would continue to be deposited between Trimble Road and Montague Expressway after all flood protection projects are operational. Such sediment removal is anticipated to be necessary to maintain channel capacity for conveying flood waters. Removal of sediment containing excessive levels of mercury would be considered beneficial to the overall goal of the San Francisco Bay RWQCB's TMDL program for mercury.

As described in Section 6.2.3.2, "Cumulative Impacts – Operational Impacts," operation of the proposed flood protection projects on the Guadalupe River would cause local changes ~~in the patterns of erosion and deposition of sediments already in the riverbank soils. Some of the~~ to existing erosion and sediment deposition patterns. As explained in Section 4.3.2, "Toxic Constituents", some sediments that would be affected by such changes could contain unacceptable levels of mercury. However, although mercury-bearing sediments have the potential to be transported in either the suspended wash load or the bedload, net erosion caused by peak flow conveyance in the Guadalupe River system is expected to be reduced by implementing the proposed flood protection projects, including invert stabilization structures, bypasses, channel bed and bank armoring, additional vegetative bank cover, and bank management.

The flood protection projects would not affect the source or input of mercury into the system. Therefore, the existing mercury budget for the Guadalupe watershed would not increase because of construction of the projects. As described in Section 3.4.3, ~~"Proposed Action~~"Bypass System Alternative – Environmental Commitments," ~~a soil management plan will~~ an erosion and sediment control plan would be implemented for the Guadalupe River Project with ~~Proposed Action~~Bypass System Alternative to avoid sediment discharges into the river during construction activities. ~~It is assumed that the measures in the Soil Management Plan would also~~The erosion and sediment control plan would require contractors to:

- conduct all construction work in accordance with site-specific construction plans that minimize the potential for sediment input to the stream
- grade spoil sites to minimize surface erosion and apply erosion control measures as appropriate to prevent sediment from entering water courses or the stream channel, to the extent feasible
- avoid operating equipment in flowing water by using temporary cofferdams or some other suitable diversion to divert channel flow around the channel and bank construction area

In addition, a soil management plan would be implemented for the ~~Upper~~ Guadalupe River Project ~~and Lower Guadalupe River Project. The Soil Management Plan consists of~~ with Bypass System Alternative that would provide procedures for classifying soils, as well as procedures and criteria for disposal and reuse. Prior to project implementation, the soil management plan will be updated to reflect final project design and to incorporate input from RWQCB regarding management of soils containing elevated mercury concentrations. The updated soil management plan will be submitted to RWQCB for approval prior to implementation.

The following restrictions on soil management would be included in the soil management plan submitted to RWQCB for approval:

- Sediments with mercury concentrations that exceed hazardous waste criteria under federal or state law must be disposed offsite in appropriately licensed disposal sites. The determination of hazardous properties shall comply with all applicable statutes and regulations pertaining to hazardous wastes.

- Excavated soils with mercury concentrations not exceeding hazardous waste criteria but greater than 1 mg/kg may not be reused onsite unless such soils are placed above the low flow channel or in adjacent areas where frequent exposure to overbank flow is not anticipated to occur; above the water surface elevation defined by the 3-year recurrence interval.

- Excavated surfaces above the 3-year recurrence interval elevation that contain mercury concentrations higher than hazardous waste levels will be overexcavated and replaced with soils meeting the above criteria for onsite reuse. Excavated surfaces below the 3-year recurrence interval elevation which contain mercury concentrations greater than 1 mg/kg will be overexcavated and replaced with clean imported soil.

- The limitations on onsite reuse of excavated soils and sediments would also apply to operation and maintenance activities throughout the life of the proposed project.

~~In addition, SCVWD will periodically remove bedload sediment that accumulates in the channel between Trimble Road and Montague Expressway. As discussed in~~ The potential for conversion of sediment-bound mercury into soluble methyl mercury exists in any wetland or shallow sediment deposit. Although recent monitoring in Guadalupe Creek found methyl mercury production throughout the restoration project area and upstream within the pore water of the first 2 cm of creek sediment (Santa Clara Valley Water District and U.S. Army Corps of Engineers, 2000b), the formation rate could not be determined based on the limited sampling program conducted. These projects also have the potential to change the future distribution of methyl mercury because projects in the Guadalupe River watershed could slightly alter the ongoing pattern of erosion and

sediment deposition (Section 6.2.3.2, "Cumulative Impacts ~~Operational Impacts," sedimentation studies for~~ on River Geomorphology – Operational Impacts"), but almost no information exists on the existing transport of sediment - bound mercury, the existing locations of mercury deposition, or the existing rate of methyl mercury formation in the Guadalupe River ~~indicate that over 90 percent of the bedload will continue to be deposited in the reach between Trimble Road and Montague Expressway when all~~ system (Section 4.3.2, "Toxic Constituents"). The flood protection projects ~~are operational. This measure is anticipated to be necessary to maintain channel capacity for conveying flood waters. Removal of sediment that contains excessive levels of mercury would be considered beneficial to the overall goal of the San Francisco Bay RWQCB's TMDL program for mercury, which is to reduce mercury contamination in the watershed.~~ on the Guadalupe River and the Guadalupe Creek Restoration Project are expected to result in the following:

- ~~Operation of the flood protection projects~~ The projects would not change the amount or rate of sediments entering the Guadalupe River from sources such as surface runoff and storm drains.
- Net erosion caused by peak flow conveyance in the Guadalupe River system is expected to be reduced by implementing the projects.
- The overall rate of erosion and sediment deposition on a watershed scale is not expected to change and may be reduced with the implementation of the projects.

Despite the project benefits outlined above, mercury and the potential for methylation in the Guadalupe River watershed ~~could cause sediment to accumulate behind habitat improvement and structural components, including wetland and riparian vegetation plantings and low-flow channel check and invert stabilization structures. Because of the potential for formation of methyl mercury in shallow sediment deposits and wetlands, projects~~ will be an ongoing regional concern. Leaching of mine tailings and overland flow of mercury-rich soils have resulted in the downstream accumulation of mercury in the Guadalupe River watershed ~~that contribute to changes in sediment deposition could contribute to a cumulative impact involving changes in the locations and rates of methyl mercury formation but the rate and location of the potential changes are unknown. This cumulative impact is considered potentially significant.~~, thereby contaminating the river and its tributaries, including Guadalupe Creek and Alamitos Creek. This issue constitutes an ongoing significant cumulative impact under NEPA and CEQA.

~~SCVWD will implement the~~ The following mitigation measures would avoid and minimize cumulative impacts from disturbance and transport of methyl mercury in the watershed, resulting in a less-than-significant cumulative impact.

Assess Mercury Transport and the Potential for Methylation in the Guadalupe River Watershed. SCVWD ~~will participate~~ is committed to participating with the San Francisco Bay RWQCB and other appropriate agencies in assessing mercury transport in the Guadalupe River and the potential for methylation associated with any wetland and riparian mitigation on SCVWD's lands as part of the mercury TMDL program for San Francisco Bay and the Guadalupe River. SCVWD will coordinate with the San Francisco Bay RWQCB regarding monitoring methods for the proposed monitoring program. SCVWD's participation will include continuous monitoring of flow, as well as monitoring of total suspended solids and total and bioavailable mercury.

Methyl mercury concentrations in channel bed sediments of the Guadalupe River will also be monitored. SCVWD monitoring of methyl mercury concentrations will be conducted in freshwater, seasonal wetland, and riparian environments at sites approved by the San Francisco Bay RWQCB. Monitoring will be conducted ~~at least quarterly for a minimum of 1 year~~ for 5 years starting in 2001. Watershed monitoring will be coordinated with pre- and postproject monitoring as described in Section 5.3.3.3, "Toxic Constituents – Mercury" and other localized monitoring efforts in the watershed such as on Guadalupe Creek. The data collected from the monitoring will be used by SCVWD and the San Francisco Bay RWQCB to develop BMPs to minimize methylation and the overall transport of mercury-laden sediments to San Francisco Bay.

Although this monitoring would assist in the San Francisco Bay RWQCB's efforts to minimize and manage the adverse effects of mercury in Guadalupe River sediments, the most effective way to reduce the amount of mercury in the Guadalupe River is to control its discharge to the river from sources in the upper watershed. However, such actions are beyond SCVWD's authority and jurisdiction. Ultimately, regional implementation of the TMDL will be necessary to solve the regional mercury contamination problem.

Develop and Implement the TMDL or Similar Program for Mercury for San Francisco Bay. The San Francisco Bay RWQCB is developing a TMDL for mercury for the San Francisco Bay and has the responsibility and jurisdiction to implement it. The TMDL program proposes a significant reduction in the transport of mercury to the San Francisco Bay from the Guadalupe River system. The goal of the TMDL for mercury in the San Francisco Bay region is to reduce in-bay sediment concentrations to less than 0.4 mg/kg in fine sediments less than 63 micrometers. The TMDL will identify involved parties and their proportional responsibility for the reduction of mercury inputs to the San Francisco Bay. SCVWD will participate in the TMDL program.

Response to Comment EPA-10

Mercury contamination is a problem throughout the Guadalupe watershed. Mercury ore deposits occur naturally, associated with serpentine outcrops in the hills of the watershed that were actively mined throughout the mid to late 1800s and into the 1900s. Figure 4.3-1 identifies the locations of mines in the watershed, the largest area includes the mines of the New Almaden area. These mining complexes extracted and processed ore, producing large volumes of elemental mercury (quicksilver) during their periods of operation. As a result of this intensive mining activity, tributaries of the Guadalupe River, including Guadalupe Creek and Alamitos Creek, as well as the Guadalupe River itself, have been contaminated with mercury. Large quantities of mercury exist within the sediment and bank soils of these waterways as a product of mercury extraction in the watershed.

Over several sampling events between 1991 and 1993, river sediments and bank soils were collected along Segment 3 of the Guadalupe River and analyzed for total recoverable mercury wet weight (CH2M HILL, 1995, CH2M HILL, 1994). River sediment results ranged from 0.05 (method detection limit) to 49 mg/kg, with a mean of 4.2 mg/kg and standard deviation of 7.8 (total of 40 samples). Riverbank soils ranged from 0.14 to 5.2 mg/kg, with a mean of 1.7 mg/kg and standard deviation of 1.4 (total of 34 samples).

In June 2000, bank samples were collected on Guadalupe Creek between Camden Avenue and the Almaden Expressway and analyzed for total recoverable mercury wet weight (Tetra Tech, 2000). Creek bank soils (6-inch depth) ranged from 3.8 to 65 mg/kg, with a mean of 19.7 mg/kg and standard deviation of 13.8 (total of 26 samples).

Additional sampling has been conducted by various entities and individuals throughout the watershed, and results are summarized in Woodward-Clyde Consultants, 1992. These data principally focused on the New Almaden mine area and the California Department of Toxic Substances Control's efforts to remediate and stabilize the Almaden Quicksilver County Park site. In summary, a mercury concentration gradient occurs in the Guadalupe River and tributary sediments, starting in the tenths of a mg/kg total recoverable mercury near Alviso Slough and the San Francisco Bay to more than 300 mg/kg in small intermittent drainages at the Almaden mining complex (Woodward-Clyde Consultants, 1992).

Based on these site characterization studies and subsequent remedial actions, California Department of Toxic Substances Control announced its certification of the Almaden Quicksilver County Park in February 2000. Certification indicates that all appropriate removal and remedial actions have been completed. Remedial work included site containment and stabilization through placement of vegetated soil covers and streambank stabilization.

The following change is made to the Draft EIR/SEIS:

Pages 4-25 and 4-27. The last two paragraphs of Section 4.3.2, "Toxic Constituents," is changed as follows:

> Mines such as the New Almaden Mine ~~Quicksilver cinnabar (mercury) mine~~, which operated for many years in the upper watershed, are known to be a source of the mercury in the Guadalupe River watershed. Leaching of mine tailings and overland flow of mercury-rich soils have resulted in the

downstream accumulation of mercury in the Guadalupe River watershed. The mercury problem is, in large part, a legacy of the California gold mining era because mercury was used to extract gold. Figure 4.3-1 identifies the locations of mines in the watershed, the largest of which are the mines in the New Almaden Mining District. The New Almaden ~~mine~~ Mining District ~~complex was the largest of the mines in the watershed; this mine~~ is located on lands that are now part of the approximately 4,000-acre Almaden Quicksilver County Park, which is owned by the Santa Clara Parks and Recreation Department. Additional mines include the Guadalupe Mines adjacent to Guadalupe Creek at the Guadalupe Landfill. As a result of this intensive mining, tributaries of the Guadalupe River, including Guadalupe Creek and Alamitos Creek, as well as the Guadalupe River itself, have been contaminated with mercury. Large quantities of mercury exist within the river-bottom sediments and riverbank soils of these waterways as a product of mercury extraction in the watershed.

A number of complex physical and chemical factors affect the solubility of mercury in water and its availability for uptake in aquatic organisms. Although mercury is primarily found in a sediment-bound form, sediment-bound mercury may still be available to aquatic organisms and thus remains a pollutant of concern. The greatest concern with regard to the accumulation of mercury-laden sediments in the watershed is the potential for sediment-bound mercury to transform to dissolved and methylated forms that can be readily adsorbed by aquatic organisms (plant uptake is considered insignificant). The solubility of mercury in fresh water is affected by a number of chemical and physical factors, but is generally low. Factors conducive to methylation of mercury include low-flow or stagnant waters, hypoxic or anoxic conditions in the water column, low pH (< 6), and high concentrations of dissolved carbon. Most of these factors are in turn affected by biological processes such as metabolism, growth, and decay. Because methylation is affected by biological processes, it is likely that the rate and quantity of methyl mercury formation changes seasonally. ~~Through biotic and abiotic processes, sediment-bound mercury can be transformed into methyl mercury, which has been demonstrated to accumulate in the muscle tissue of exposed organisms.~~

Samples of river-bottom sediments and bank soils were collected along Reach 3 of the Guadalupe River several times between 1991 and 1993 and analyzed for total recoverable mercury wet weight (CH2M HILL, 1995, CH2M HILL, 1994). River-bottom sediment results ranged from 0.05 (method detection limit) to 49 mg/kg, with a mean of 4.2 mg/kg and standard deviation of 7.8 (total of 40 samples). Results for riverbank soils ranged from 0.14 to 5.2 mg/kg, with a mean of 1.7 mg/kg and a standard deviation of 1.4 (total of 34 samples). More recent sampling on the Guadalupe River between Highway 237 and Blossom Hill Road (below Almaden Expressway) documented mercury concentrations ranging from 0.05 to 0.46 mg/kg in a suite of 10 samples (Tetra Tech, 2000).

In June 2000, bank samples were collected on Guadalupe Creek between Camden Avenue and the Almaden Expressway and analyzed for total recoverable mercury wet weight (Tetra Tech, 2000). The results for the creekbank soils (6-inch depth) ranged from 3.8 to 65 mg/kg, with a mean of 19.7 mg/kg and a standard deviation of 13.8 (total of 26 samples).

Additional sampling has been conducted by various entities and individuals throughout the watershed, and results are summarized in Woodward-Clyde Consultants, 1992. These data principally focused on the New Almaden mine area related to site characterization efforts and the California Department of Toxic Substances Control's efforts to remediate and stabilize the Almaden Quicksilver County Park site. In summary, a mercury concentration gradient occurs in the Guadalupe River and tributary sediments, starting in the tenths of a mg/kg total recoverable mercury near Alviso Slough and the San Francisco Bay to more than 300 mg/kg in small intermittent drainages at the Almaden mining complex (Woodward-Clyde Consultants, 1992).

Based on these site characterization studies and subsequent remedial actions, California Department of Toxic Substances Control announced its certification of the Almaden Quicksilver County Park in February 2000. Certification indicates that all appropriate removal and remedial actions have been completed. Remedial work included site containment and stabilization through placement of vegetated soil covers and streambank stabilization.

Table 1H-1 in Appendix 1H indicates that analysis for mercury in water samples has not been conducted with detection limits that are sufficiently low to allow evaluation of compliance with the applicable Basin Plan water quality objective for mercury of 0.025 ug/L. Furthermore, samples analyzed for mercury, as presented in Appendix 1H, were analyzed for dissolved mercury rather than total recoverable mercury, on which the Basin Plan water quality objective is based. Data in Appendix 1H indicate that dissolved mercury is merely a fraction of total recoverable mercury. On at least two occasions, mercury concentrations in Guadalupe River water exceeded the Basin Plan water quality objective. It is likely, given the fact that the detection limits were higher than the water quality objective and the parameter measured was dissolved mercury, that the water quality objective was exceeded more frequently than indicated by the data in Appendix 1H. ~~However, two samples exceeded National Toxics Rule criteria. Concentrations of mercury in sediment within the project area were found to range from 0.05 to 49 mg/kg in channel sediments (CH2M HILL, 1995 CH2M HILL, 1994).~~ There are no State or Federal standards for concentrations of sediment-bound mercury; however, the goal of the TMDL program for mercury in the San Francisco Bay ~~region~~ is to reduce in-bay sediment concentrations to less than 0.4 mg/kg in fine sediments less than 63 micrometer.

Response to Comment EPA-11

The Corps believes the Guadalupe River Project meets the requirements of Section 313 of the Clean Water Act by complying with Sections 401, 402, and 404 of the Clean Water Act and other regional and local requirements. The Draft EIR/SEIS has been updated to include a section that outlines how the Guadalupe River Project met these Federal, State, and local requirements.

The following changes are made to the Draft EIR/SEIS:

Page 1-18. Section 1.5.1.4, "Clean Water Act," is modified as follows:

> **Section 313.** Section 313 of the CWA (US Code Title 33, Section 1323. Federal facilities pollution control) requires "...each department, agency, or instrumentality of the executive, legislative, and judicial branches of the Federal government having jurisdiction over any property or facility, or engaged in any activity resulting, or which may result, in the discharge or runoff of pollutants...shall be subject to, and comply with, all Federal, State, interstate and local requirements, administrative authority, and process and sanctions respecting the control and abatement of water pollution in the same manner, and to the same extent as any nongovernmental entity.
>
> The Corps has complied with Section 313 of the CWA by complying with Sections 404, 401, and 402 of the CWA, California Fish and Game Code Section 1600, regional and local requirements of the San Francisco Bay Regional Water Quality Control Board and State Water Resources Control Board through the Water Quality Control Plan for the San Francisco Bay Basin and NPDES permitting. The Corps has considered and mitigated for changes in water temperature through onsite and offsite mitigation; considered and addressed suspended solids and biostimulatory nutrients through the SWPP, erosion and sediment control plan, and spill prevention and response plan; and considered and addressed toxic constituent through the spill prevention and response plan and the Water Quality Control Plan.

Response to Comment EPA-12

Based on the preliminary planning level sediment study (Northwest Hydraulic Consultants, 1999) and preliminary movable bed modeling study (HEC-6)(U.S. Army Corps of Engineers, 2000), the overall potential for bed erosion in Segments 3A and 3B would be reduced and potential for sediment deposition would increase (Figures 5.2-1, 5.2-2, and 5.2-3).

The preliminary planning level sediment study fully considered sediment transport capacity for intermediate-sized flood events (2-, 10-, 25-, 50-year events and average annual) in addition to the 100-year design event (Northwest Hydraulic Consultants, 1999). However, because the design of the project was evolving and the Corps is currently conducting a movable bed modeling study, the intermediate sediment data from the preliminary

planning level sediment study was not presented in the Draft EIR/SEIS. Since publication of the Draft EIR/SEIS, preliminary results from the movable bed analysis have become available, and the text of Section 5.2.3 has been substantially revised, as follows, to reflect this new information.

The following changes are made to the Draft EIR/SEIS.

Section 5.2.3, "Proposed Action," is modified as follows:

5.2.3 ~~Proposed Action~~Bypass System Alternative

The ~~Proposed Action~~Bypass System Alternative includes the construction of a bypass in Segments 3A and 3B, the construction of flood training walls that direct overbank flows back to the river in Segment 3C, expanded onsite mitigation, and additional offsite mitigation. The Guadalupe River Project with Bypass System Alternative ~~Proposed Action is~~includes the operation of Segments 1, 2, and 3 and the Woz Way to Park Avenue bypass reach ~~(Chapter 8, "Recommended Plan and Implementation Requirements")~~. The incremental effects of the ~~Proposed Action on~~Bypass System Alternative on channel erosion, deposition, and river geomorphology cannot be adequately evaluated in isolation from the effects contributed by the previously completed phases of the Authorized Project. For this reason, the effects of the ~~Proposed Action on channel erosion and deposition and river morphology~~Bypass System were evaluated for the Guadalupe River Project with ~~Proposed Action,~~Bypass System Alternative, rather than for only the construction and operation of Segments 3A and 3B.

As discussed in Section 5.1.3.2, "Flow Velocity," the Guadalupe River Project with ~~Proposed Action~~Bypass System Alternative would not change the flows or velocities downstream from Coleman Avenue in Segments 1 or 2 or Reach A under any floodflow. The primary change in hydraulic conditions as a result of bypass operation would ~~be~~consist of changes in flows and corresponding velocities in Segments 3A and 3B. These changes in flows and velocities ~~would~~have the potential to influence the downstream channel erosion and deposition processes and~~the~~ river morphology in Segments 1, 2, and 3~~and~~ downstream in Reach A, and beyond to Trimble Road.

5.2.3.1 Channel Erosion and Deposition

~~Operation of the Guadalupe River Project with Proposed Action is not expected to change patterns of wash load transport or suspended sediment because there would be no project-related changes to the channel maintenance flows that are responsible for transporting fine clay, silt, and sand. As described in Section 4.2.3, "River Morphology," the channel maintenance flow is approximately 1,200 cfs, and the bypass system would not begin to operate until flows exceed 1,500 cfs.~~

~~*Determination:* Operation of the Guadalupe River Project with Proposed Action would have no adverse effect on wash load transport because there would be no project-related changes to the channel maintenance flows.~~This

section describes potential impacts from changes in the patterns of channel bed erosion and deposition. Changes in either channel erosion or deposition are reflected in the amount of sediment transported from one segment of a river to the next. Sediment transport occurs in two principal forms, washload sediment and bedload sediment. Washload sediment is eroded material in the form of clays, silts, and fine sands that becomes suspended in the water column, does not settle out, and is normally transported to the mouth of the river. Bedload sediment is larger eroded material that is transported only when sufficient energy is present. Consequently, bedload sediment may be eroded from one channel bed location, transported a potential distance of feet or miles, and deposited at another location downstream, depending on the magnitude and duration of a particular flow event.

The relative difference between erosion and deposition in any given river segment is referred to as the "sediment balance." The sediment balance reflects the net change in erosion and deposition, as measured by the numerical analyses described in the following section. This information is used to identify areas of a river that require a more detailed study of hydraulic conditions. For example, a sediment imbalance would be indicated when, in a particular reach, the localized erosion exceeds the general depositional nature of the reach or vice versa. The following discussions describe the sediment transport analyses that have been and are being conducted for the Guadalupe River Project with Bypass System Alternative. The first is a quantitative evaluation of bedload sediment transport and the potential for channel erosion and deposition, followed by a qualitative discussion of washload transport.

Bedload Sediment Transport. ~~To~~ Two numerical sediment transport analysis methods have been used to evaluate potential channel erosion and deposition characteristics of the Guadalupe River Project with Bypass System Alternative. These methods are knows as the Sediment Accounting Methodology model (SAM) and the Hydraulic Engineering Center-6 (HEC-6) movable bed numerical model.

~~in Segment 3C, a~~The first method used was SAM. SAM is a preliminary, planning-level, sediment transport continuity model developed by the Waterways Experiment Station (WES). The SAM model estimates the potential for erosion and deposition of bedload sediment based on a simplified representation of channel hydraulics for each river reach. The SAM model does not consider natural or artificial bed armoring and assumes that material can be eroded to meet the potential energy levels described by the representative hydraulic conditions. Consequently, the results of the SAM model may overestimate the amount of potential channel erosion or deposition in rivers that have bedrock or other resistant materials that would limit channel erosion. In addition, the SAM model cannot identify precise locations of potential sediment deposition or erosion. However, the results of the SAM model can be used as a preliminary screening tool to indicate a

potential for substantial channel erosion or deposition that warrants further investigation.

The second method uses the HEC-6 "Scour and Deposition in Rivers and Reservoirs" movable bed numerical, which was developed by the Hydraulic Engineering Center (HEC). HEC-6 is sophisticated movable bed sediment transport model. The HEC-6 sediment model estimates erosion and deposition based on the hydraulic characteristics at numerous cross sections within each river reach. The HEC-6 sediment model also considers the depth and texture of the channel bed and bank materials as well as underlying resistant layers that would limit erosion when calculating channel bed scour.

~~analysis was completed for the Woz Way to Park Avenue bypass reach system~~ **Sediment Accounting Methodology Analysis.** The SAM model was initially used to evaluate the Authorized Project, as discussed in the GDM, to evaluate the potential for excessive channel erosion and deposition (U.S. Army Corps of Engineers, 1991b). ~~This analysis indicated that bedload sediments would be deposited immediately downstream from the~~The sediment transport relationships developed for the Authorized ~~bypass inlet and behind several of the Highway 87 and Interstate 280 bridge piers (U.S. Army Corps of Engineers, 1991b). However, because the Segment 3A and 3B bypasses for the Proposed Action were not considered in that analysis, the specific conclusions regarding the quantity and location of erosion and deposition may no longer be valid.~~

~~A preliminary planning-level sediment transport continuity study (sediment study) was prepared for the Proposed Action to evaluate the hydraulic conditions and sediment transport properties of the bypass system in Segments 3A and 3B (Figures 5.2-1 and 5.2-2) (Northwest Hydraulic Consultants, 1999). The Corps is currently constructing a physical model of the Guadalupe River to further evaluate the hydraulic conditions and sediment transport characteristics of the bypass system in Segments 3A and 3B.~~

~~Figure 5.2-1 shows average annual estimates of erosion and deposition for each segment affected by the proposed bypass system. The sediment study indicates that operation of the proposed bypass system will have little effect on average annual sediment transport in Segments 3A and 3B. As shown in Figure 5.2-2, the sediment study indicates that 50,000 tons of sediment is likely to be deposited in the bypassed reaches of the river, Segments 3A and 3B, during the 100-year design floodflow, which is approximately two-thirds of the bedload delivered to the downtown reach (Table 4.2-2).~~

~~Because the Corps has not yet completed detailed sediment transport analyses, the precise locations of potential sediment deposition or erosion within each reach analyzed in Figures 5.2-1 and 5.2-2 cannot be determined; the magnitude of likely changes in channel bed incision and bank stability also cannot be determined at this time. However, likely erosion and deposition can be expected in areas where mean channel velocities change~~

~~abruptly. As shown in Figure 5.1-3, there would be an abrupt decrease in velocity immediately downstream from Santa Clara Street and St. John Street, which corresponds to the inlets of the proposed bypass system. Deposition would likely occur directly downstream from these inlets. Velocities rapidly increase downstream from the Guadalupe River's confluence with Los Gatos Creek. Erosion has the potential to occur at this location.~~

~~Although the sediment study indicates that overall the bypass reaches would be slightly depositional (Figures 5.2-1 and 5.2-2), there are several locations in Segments 3A and 3B where velocities will remain high enough (Figure 5.1-3), even with operation of the bypass system, to cause localized channel bed erosion (Northwest Hydraulic Consultants, 1999).~~

~~Consequently, the Proposed Action includes constructing 9 to 15 invert stabilization structures in the bypassed portions of Segments 3A and 3B (Section 3.4.2.4, "Invert Stabilization Structure") that will minimize effects on channel stability as well as reduce bed erosion, maintain an open channel for fish passage, and help retain spawning gravels (Figure 3.4-8). As part of the final design and placement of the Guadalupe River Project with Proposed Action, movable bed numerical model studies will be conducted to determine the need for and number of invert stabilization structures and to aid in their design and placement. USFWS, NMFS, and CDFG will review and approve the final design of the invert stabilization structures prior to construction.~~

~~*Determination:* Operation of the Guadalupe River Project with Proposed Action would have a less-than-significant adverse effect on channel erosion and deposition in Segments 3A and 3B.~~

~~The sediment study indicates that operation of the proposed bypass system would affect sediment transport in Segments 1 and 2, where on an average annual basis almost 25,000 tons of erosion may occur (Figure 5.2-1). This rate is approximately twice the rate under preproject (1985) conditions (Table 4.2-3) and approximately 5 times more than under existing (1999) conditions. Channel erosion may occur in the area immediately downstream from the Coleman Avenue outlets to the bypass system. Site inspections and recent channel cross-section surveys conducted in Segments 1 and 2 confirm that erosion of the natural channel has been occurring in this portion of the river since 1985 (Northwest Hydraulic Consultants, 1999).~~

~~Under the 100-year design floodflow, the segment of the river immediately below Coleman Avenue, where the bypassed flows return to the river, may experience as much as 125,000 tons of erosion, or 90 times greater erosion than the existing (1999) conditions. These conditions may result in channel bed erosion and loss of bank stability. Because approximately two-thirds of the bedload delivered to the downtown reach during the 100-year design floodflow would be deposited in Segments 3A and 3B, portions of Segments 1 and 2 may be scoured of bedload. However, the maximum potential erosion depicted in Figures 5.2-1 and 5.2-2 is unlikely because the natural~~

~~channel substrate includes embedded cobbles and gravels and erosion-resistant bed and bank materials, which provide some level of bed armoring. The sediment study results presented in Figures 5.2-1 and 5.2-2 do not consider natural bed armoring that resists erosional forces; therefore, the sediment study probably overestimates the potential erosion below Coleman Avenue. Although probably overestimated, the sediment study indicates that the sediment imbalance and thus the potential for channel erosion in Segments 1 and 2 could be substantially greater than the potential for erosion under existing conditions.~~

~~*Determination:* The Guadalupe River Project with Proposed Action would substantially increase the potential for channel erosion downstream from the bypass system in Segments 1 and 2. Using criteria in Section 5.2.1, "Criteria for Determining Significance," the Proposed Action was determined to result in a significant adverse effect. To mitigate potential changes in the channel configuration from erosion and deposition processes in Segments 1 and 2, the project partners would conduct annual monitoring in accordance with the MMP (Section 4.3.4.9 ; Appendix 3). If necessary, remedial actions will be developed in accordance with the MMP and required environmental analysis will be completed.~~Project, which are described in the GDM, were subsequently used to evaluate the sediment transport properties of the bypass system in Segments 3A and 3B under the Bypass System Alternative (SAM sediment study) (Northwest Hydraulic Consultants, 1999).

The SAM sediment study indicated that operation of the Bypass System Alternative would have little effect on average annual sediment transport in Segments 3A and 3B. The SAM sediment study indicated that under the 2-, 10-, 25-, 50-, and 100-year design Segments 3A and 3B would accumulate bedload sediments. Where as under existing conditions these segments would be erosional. Although the SAM sediment study indicated that overall the bypass reaches would be depositional, it is likely that velocities at several locations in Segments 3A and 3B would remain high enough, even with operation of the bypass system, to cause some localized channel bed erosion (Northwest Hydraulic Consultants, 1999).

The SAM sediment study also indicated that operation of the proposed bypass system could affect sediment transport in Segments 1 and 2. On an average annual basis, the potential for erosion in these segments would be approximately twice the rate under preproject (1985) conditions and approximately five times greater than the existing (1999) conditions rate of 4,300 tons per year (Northwest Hydraulic Consultants, 1999). Under the 100-year design flood, potential for erosion in Segments 1 and 2 would be almost 100 times greater than under existing conditions, 121,700 tons compared to 1,300 tons.

As discussed previously, the SAM sediment study did not consider that the natural channel substrate contains embedded cobbles and gravels and erosion-resistant bed and bank materials (Section 4.2.2) that provide some level of bed armoring. However, it was concluded that the project would

cause substantial erosion in Segments 1 and 2. The Draft EIR/SEIS concluded the magnitude of the potential for channel bed erosion and loss of bank stability in Segments 1 and 2 could be substantially greater than the potential for erosion under existing conditions. When the Draft EIR/SEIS was completed, this was the best available information on the effects of the Bypass System Alternative.

Using the best information then available, the Draft EIR/SEIS concluded that the potential for erosion in Segments 1 and 2 was a significant adverse effect. The Draft EIR/SEIS recommended that a more detailed movable bed analysis be completed to better evaluate the potential for erosion and suggested the use of invert stabilization structures to mitigate the effects of erosion.

Movable Bed Numerical Modeling Analysis. SPK has recently completed an HEC-6 sediment study to evaluate potential channel erosion and deposition during the 100-year design flood with the Guadalupe River with Bypass System Alternative (U.S. Army Corps of Engineers, 2000). This model is currently being used by SPK to further evaluate potential erosion problems identified in Segments 1 and 2 with the SAM model (U.S. Army Corps of Engineers, 2000). The information acquired from this more sophisticated model was not available at the time the Draft EIR/SEIS was sent out for public review. Because of the conclusions of the SAM sediment study, an HEC-6 sediment study was conducted to analyze the entire Guadalupe River Project with Bypass System Alternative from I-280 to I-880 including all of Segments 1 and 2 (U.S. Army Corps of Engineers, 2000).

Figure 5.2-1, shows the results of the HEC-6 sediment study for the 100-year design flood with the Guadalupe River with Bypass System Alternative. The potential for channel erosion in Segment 3B would be reduced from Santa Clara Street downstream to St. John Street, although this area would remain slightly erosional. Under existing conditions approximately 7,500 tons of sediment would erode during a 100-year flood; under project conditions only 700 tons of sediment would erode. The portion of Segment 3B that is downstream from St. John Street Bridge to New Julian Street would become depositional as high flows are diverted into the bypass system. Figure 5.2-1 shows that under existing conditions 3,100 tons of sediment may erode, whereas with the project, 2,100 tons of sediment would be deposited. Segment 3A from New Julian Street to Coleman Avenue would also become depositional. Under existing conditions, 6,500 tons of sediment would erode, whereas with the project, 5,500 tons of sediment would be deposited. Although Segment 3B and Segment 3A would become depositional, there will be localized areas of erosion in each segment (U.S. Army Corps of Engineers, 2000).

The HEC-6 sediment study also indicates that Segments 1 and 2 can be considered erosional for the 100-year design flood with the exception of a short depositional reach somewhere between Coleman Avenue and Taylor Street. The deposition in this reach occurs because rising floodflows expand onto the floodplain terrace, which results in decreased channel velocities. The

HEC-6 sediment study indicates that with implementation of the Bypass System Alternative, about 5,450 tons of bedload sediment material would be eroded during the 100-year design flood, which is essentially the same amount of material that would be eroded under existing conditions (Figure 5.2-1) (U.S. Army Corps of Engineers, 2000). Table 5.2-1 shows the anticipated quantity of erosion that would occur in Segments 1 and 2 under a range of flood conditions.

TABLE 5.2-1. Estimated tons of channel bed erosion using the HEC-6 model for a range of floods in Segments 1 and 2 of the Guadalupe River Project with Bypass System Alternative.

Recurrence Interval	Estimated Channel Bed Erosion (tons)
100-year	-5,450
20-year	-4,800
10-year	-3,950
5-year	-3,750
2-year	-3,000

Source: U.S. Army Corps of Engineers, 2000

Although results of the HEC-6 sediment study of the other river segments for the intermediate floodflows are not currently available, it is anticipated that the proportional changes in erosion or deposition will be similar to the proportional changes shown for Segments 1 and 2 (U.S. Army Corps of Engineers, 2000).

Implementation of the Bypass System Alternative would include constructing 9 to 15 invert stabilization structures in the bypassed portions of Segments 3A and 3B and another 9 to 20 invert stabilization structures in Segments 1 and 2 (Section 3.4.2.4, "Invert Stabilization Structure"). These invert stabilization structures would help retain spawning gravels and prevent localized bed erosion. The invert stabilization structures would also maintain an open channel for fish passage by providing sediment transport during low flows (Figure 3.4-8), preventing excess sediment deposition that could fill pools and create riffles that could impede fish passage. In addition, the invert stabilization structures would minimize deposition of sediments that could direct low flows against the riverbank, thereby preventing localized bank erosion and bank instabilities.

The channel erosion and deposition analyses are being updated and refined as the project progresses through the design process. As detailed geophysical data such as depth and texture of bed materials are collected to facilitate the final design, these data will also be used to refine the HEC-6 sediment study. In addition, a physical model of the Guadalupe River has been constructed to analyze and refine the hydraulic characteristics and sediment transport

characteristics of the bypass system in Segments 3A and 3B. Results from the physical model and additional HEC-6 sediment studies will be used to refine and verify the performance of the final project design.

As part of the final design of the Guadalupe River Project with Bypass System Alternative, HEC-6 analyses will be used to determine the need for and number of invert stabilization structures. The HEC-6 analyses will also aid in the design and placement of the invert stabilization structures. USFWS, NMFS, and CDFG will review and approve the final design of the invert stabilization structures prior to construction.

In addition, the Corps and SCVWD will annually monitor channel bed stability and bank stability in accordance with the MMP (Section 4.3.4.9 in Appendix 3). This monitoring will assure that unexpected erosion or deposition does not occur after the Bypass System Alternative is operational. If monitoring reveals that it is necessary, remedial actions would be developed in accordance with the MMP, and a required environmental analysis under NEPA and CEQA would be completed.

Determination: Although the SAM sediment study indicated that the Bypass System Alternative would substantially increase erosion potential in Segments 1 and 2, the more sophisticated HEC-6 sediment study does not support this previous conclusion. Based on the HEC-6 sediment study, operation of the Guadalupe River Project with Bypass System Alternative would have a less-than-significant effect on channel erosion and deposition in Segments 1, 2, 3A, and 3B. The Bypass System Alternative includes the construction of 9 to 15 invert stabilization structures in the bypassed portions of Segments 3A and 3B and, if needed, an additional 9 to 20 structures in Segments 1 and 2. These structures would minimize effects on channel stability caused by erosion and bedload sediment deposition to a less-than-significant level. The potential for channel erosion in Segments 1 and 2 would be essentially the same as the potential under existing conditions. Therefore, it was determined that implementation of the Bypass System Alternative would not result in a significant adverse effect on channel erosion or deposition.

Washload Sediment Transport. Operation of the Guadalupe River Project with Bypass System Alternative is not expected to change patterns of washload transport because no project-related changes would be made to the channel maintenance flows that would result in the transportation of clays, silts, or fine sands. As described in Section 4.2.3, "River Morphology," the channel maintenance flow is approximately 1,200 cfs. The bypass system would not begin to operate until flows exceeded a minimum of 1,500 cfs. So channel maintenance flows in the river would be maintained with the project.

Determination: Operation of the Guadalupe River Project with Bypass System Alternative would have no adverse effect on washload transport because there would be no project-related changes to the channel maintenance flows.

5.2.3.2 River Morphology

The construction of the Guadalupe River Project with ~~Proposed Action~~Bypass System Alternative would result in direct modifications of the existing channel form. Portions of Segment 3B and all of Segment 3C would be armored to prevent channel erosion (Figure 3.4-1), and artificial low-flow channels ~~will~~would be placed in the armored channel bed (Section 3.4.2, "Construction Features"). Armoring the channel bed would eliminate natural pools and runs in Segment 3B. ~~Low-flow channel designs would replace pools, runs, and riffles in the armored sections. The channel form through the armored channel bed areas would likely consist of longer riffles and runs separated by~~ However, armoring would not affect the river's morphology because the constructed low-flow channels will be designed to replace pools, runs, and riffles in the armored sections. The ~~pools, rather than the existing natural large pools separated by short riffles (Section 4.2, "River Geomorphology"). The remaining natural channel bed in Segments 3A and 3B will be modified by installing invert stabilization structures (Section 3.4.2.4, "Invert Stabilization Structures"). These features will also likely reduce the proportion of pools to riffles in comparison to the existing conditions in Segments 3A and 3B.~~

~~*Determination:* Channel bed armor in the Guadalupe River Project with Proposed Action would cause localized changes in channel form and in the riffle/run/pool complex. However, these local changes would have no adverse effect on downstream sediment delivery or river morphology.~~

~~The sediment study indicates that channel erosion could occur in Segments 1 and 2 (Figure 5.2-1). Detailed movable bed sediment transport modeling has not been conducted to identify specific locations in Segments 1 and 2 where channel form may change. Segments 1 and 2 are currently mostly pool habitat separated by short riffles (Section 4.2.3, "River Morphology"). Based on the river's potential sediment carrying capacity (Figure 5.2-1 and 5.2-2), likely changes would include the creation of more scour pools or deepening and lengthening existing pools at the upstream end of Segment 2, with scouring action decreasing in the downstream direction. The configuration or proportion of these existing Segment 1 and 2 pools may not change appreciably.~~

~~*Determination:* The Proposed Action may cause an increase in pools in Segments 1 and 2. This channel form change is considered a less-than-significant adverse effect. However, these channel form changes may affect habitat values for aquatic species (Section 5.6, "Biological Resources—Fish").~~

~~Operation of the Guadalupe River Project with Proposed Action and diversion of floodflows into the existing Woz Way to Park Avenue bypass and proposed bypass systems would reduce maximum flow in most of the downtown reach of the river channel. However, operation of the two bypasses is expected to have minimal effects on the magnitude and duration of flows responsible for channel formation. The flow required to initiate~~

~~diversion into the bypass systems will be at least 1,500 cfs. Diverting a portion of floodflows in excess of 1,500 cfs to the bypass system would not affect the frequency or duration of channel maintenance flows in the natural river channel. Consequently, there would be no change in long-term channel-forming processes. Floodflow diversion into the bypass would not increase the amount of fine sediment (wash load) deposited in the natural channel of the river.~~

~~*Determination:* The operation of the project and diversion of flows to the bypass systems would have no adverse effect on ongoing river geomorphology, including riffle/run/pool formation in the river channel.~~design of the constructed low-flow channel would result in a channel form through the armored channel bed areas that would likely consist of longer riffles and runs separated by small pools, rather than the existing large pools separated by short riffles (Section 4.2, "River Geomorphology").

The remaining natural channel bed in Segments 1, 2, 3A, and 3B would be modified by the installation of invert stabilization structures (Section 3.4.2.4, "Invert Stabilization Structures"). Results from the physical model and the additional refined HEC-6 sediment studies will be used to determine the exact number and location of invert stabilization structures (Section 5.2.3.1). As discussed in Section 5.2.3.1, these invert stabilization structures would likely retain gravel, resulting in an increase the number of riffles in Segments 1, 2, 3A and 3B compared to existing conditions.

Although constructing these features would have local effects on channel form, the features will all be designed to convey the channel maintenance flow and sediment in a manner similar to the existing conditions. Therefore, these features would not alter the geomorphic processes in the remainder of the river.

Determination: Channel bed armoring in Segments 3B and 3C and installation of invert stabilization structures in Segments 1, 2, 3A, and 3B in the Guadalupe River Project with Bypass System Alternative would have no adverse effect on ongoing river geomorphology. Because the underlying geomorphic processes would not be altered by the Bypass System Alternative, the river's geomorphology is not expected to change.

Operation of the Guadalupe River Project with Bypass System Alternative and diversion of the floodflows into the existing Woz Way to Park Avenue bypass and proposed bypass systems would reduce maximum flow in most of the downtown reach of the river channel. However, operation of the two bypass systems, Woz Way and Proposed Action, is expected to have minimal effects on the magnitude and duration of flows responsible for channel maintenance. The flow required to initiate diversion into the bypass systems would be at least 1,500 cfs. The diversion of a portion of floodflows in excess of 1,500 cfs to the bypass system would not affect the frequency or duration of channel maintenance flows in the natural river channel. Consequently, there would be no change in long-term channel maintenance processes.

> Floodflow diversion into the bypass would not increase the amount of washload deposited in the natural channel of the river.
>
> *Determination:* The operation of the Guadalupe River Project with Bypass System Alternative and diversion of flows to the bypass systems would have no adverse effect on ongoing river geomorphology, including riffle/run/pool formation in the river channel transport because there would be no project-related changes to the channel maintenance flows.

Construction and operation of the project would not alter the sediment loading of San Francisco Bay, but only alter the location of local scour and deposition within Segment 3 (Figure 5.2-3).

As described in RWQCB No. 8, construction of the project would result in the excavation and removal of approximately 30,000 cubic yards of material from the channel, possible removing 350 lbs. of mercury. At this time, however, it would be speculative to estimate the quantity of mercury that will be transported from or through the project area or to the Bay throughout the life of the project until accurate estimates are made regarding the partitioning of mercury in the sediments. Based on new analyses being prepared for the Lower Guadalupe River Flood Protection Project, it is estimated that 769,103 tons of sands or coarser materials would pass I-880 of which 13,322 tons would pass into Alviso Slough over the 100-year life of the project (Northwest Hydraulic Consultants, 2000). This analysis also shows that 3,704,890 tons of silts and finer materials would pass I-880, all of which would enter Alviso Slough over the 100-year life of the project (Northwest Hydraulic Consultants, 2000).

Please see Response to Comment EPA-4 regarding capture and disposal of mercury contaminated sediments.

Response to Comment EPA-13

The purpose of the invert stabilization structures and check dam structures is to maintain an open low-flow channel that provides fish passage and encourages sediment transport through areas likely to collect sediment. The Corps and the SCVWD believe the Draft EIR/SEIS adequately discloses the impacts of constructing and operating the structures.

Headcutting occurs when the base elevation of a channel is lowered; the channel then downcuts to reestablish a stable gradient. The invert stabilization structures would also prevent downcutting of the Guadalupe River and provide a stable base elevation at the confluence with Los Gatos Creek. Headcutting would not affect streams that discharge to the Guadalupe River because none are located downstream from the project area.

Response to Comment EPA-14

As described in Section 5.2.3.2, "River Morphology," the elevations of the bypass inlet weirs are based on the river stage that would be expected to occur at approximately 1,500 cfs.

Because the stage of the river is controlled primarily by constrictions in the channel (bridges), minor changes in bed elevation or channel geometry would not substantially change the stage of the river that occurs during floods. Therefore it is not necessary to make the weirs adjustable to account for long-term channel degradation or aggradation.

Response to Comment EPA-15

Effects of operation of the Guadalupe River Project with Bypass System Alternative on spawning gravel is discussed in Section 5.6.4.2," Anadromous Fish Spawning and Incubation." The analysis concluded that loss of spawning gravel could occur, but that monitoring and adaptive management would maintain the approximate quantity and quality of spawning gravel existing under preproject conditions. The process for monitoring and replacing spawning gravel is discussed in Section 4.5.3, "Measurable Objectives and Adaptive Management," of the MMP (Volume 2, Appendix 3).

In the event monitoring indicates that spawning gravel must be replaced, gravel may be purchased from existing aggregate suppliers or may be supplied from other SCVWD projects (Section 3.4.3.2, "Measures to Compensate for Adverse Project Effects.) The Corps and SCVWD assume that aggregate suppliers hold all applicable permits to conduct their businesses.

Response to Comment EPA-16

Section 5.4.3.1, "Riparian Vegetation" and Section 5.4.3.2, "Shaded Riverine Aquatic Cover" discuss the quantity and location of riparian habitat and shaded riverine aquatic (SRA) cover impacts as well as the quantity and location of proposed channel bed and bank armoring.

A HEP analysis was performed for the Proposed Action to develop a mitigation package that provides adequate mitigation for the loss of riparian vegetation and SRA cover vegetation. Based on the results of this HEP analysis, USFWS and NMFS determined that the mitigation package was adequate for riparian vegetation (Section 5.4.3.1, "Riparian Vegetation"). USFWS and NMFS also determined that the mitigation package was adequate for SRA cover (Section 5.4.3.2, "Shaded Riverine Aquatic Cover Vegetation").

Approximately 50 percent of the SRA cover vegetation mitigation occurs on Guadalupe Creek. See Response to Comment EPA-2 for information regarding limitations for onsite locations of mitigation. The overall SRA cover vegetation compensation ratio is 2.15:1 based on 8,387 lf of SRA cover vegetation impact and 18,026 lf of mitigation (Section 5.4.3.2, "Shaded Riverine Aquatic Cover").

SRA cover vegetation mitigation plantings in the Reach A mitigation site will occur on the east and west banks. NMFS and USFWS selected reach A as a mitigation site because it would provide good habitat for anadromous fish, especially chinook salmon, with a reduction in water temperatures. Although the west bank SRA cover vegetation planting sites would not have a vegetated buffer, on the east bank most of the SRA cover vegetation

plantings would be adjacent to the Caltrans riparian mitigation area. The Caltrans plantings, which would provide mitigation for impacts associated with the Route 87 widening project, would be located on the east bank of the Guadalupe River, outside of the proposed 15-foot-wide SRA cover vegetation planting areas.

Historically, a number of restoration projects have not been fully successful because of inadequate planning, inappropriate site conditions, and/or lack of appropriate monitoring and implementation of remedial actions. The Guadalupe River Project has included analysis of site conditions and pilot mitigation plantings. A detailed MMP (Volume 3, Appendix 2), including an adaptive management approach, has been developed to ensure the success of the mitigation program. The proposed planting technique for the restricted and unrestricted planting areas is discussed in Volume 2, Section 4.3.3.3, "Reach A Mitigation Site." Regular maintenance of SRA cover vegetation plantings in Reach A would be required within the restricted planting area, which is between approximately 300 lf and 2,000 lf downstream from the I-880 overpass. Mitigation plantings in the restricted planting area would include tree species that would be maintained by trimming the lower branches so that the canopy would be above the water surface elevation during a 1 percent flow event. This maintenance would be necessary to maintain hydraulic capacity in this portion of Reach A. Both tree and shrub species will be planted in the unrestricted planting areas and maintenance activities are expected to be minimal in the unrestricted planting areas. Ongoing maintenance, such as weed control and irrigation, would be required at all vegetation mitigation sites during the first 3 years postconstruction to assist in the establishment of the plantings (Section 3.4.2.9, "Onsite and Offsite Mitigation Areas").

The Santa Clara Valley Water District Stream Maintenance Program is discussed in Section 6.2.1, "Projects Addressed in the Cumulative Impact Analyses." Section 6.2.5.1, "Riparian Vegetation," analyzes the impacts on riparian vegetation of projects in the Guadalupe River watershed. The projects in the Guadalupe River watershed would also fully mitigate for impacts on riparian habitat. The projects include early pre-impact mitigation, and mitigation site protection plans and vegetation protection plans that avoid or minimize impacts during construction and after mitigation plantings. No significant indirect or cumulative impacts on riparian vegetation are expected.

Response to Comment EPA-17

A HEP analysis was performed for the Bypass System Alternative and the associated mitigation package. Based on the results of the HEP analysis, USFWS and NMFS consider the mitigation package adequate to offset the loss of riparian habitat (Section 5.4.3.1, "Riparian Vegetation," and Section 5.4.3.2, "Shaded Riverine Aquatic Cover Vegetation"). A wetland delineation of Segments 3A and 3B and Reach A was conducted in April 2000. The delineation concluded that no jurisdictional wetlands are present (Section 4.4.3, "Wetlands and Other Waters of the United States") in either Segment 3A, 3B, or Reach A.

The Corps and SCVWD, in coordination with the resource agencies, have extensively evaluated sites in the project area to maximize riprap or rubble removal and infill planting. In one area in Segment 1, approximately 113 lf of existing bank riprap will be removed to

create additional space for SRA cover plantings (Section 3.4.2.9, "Onsite and Offsite Mitigation Areas"). The Upper Guadalupe River Flood Control Project will also remove approximately 5,930 lf of rubble in the construction area. Approximately 3,375 lf would become natural bank (Section 6.2.1.7, "Upper Guadalupe River Flood Control Project"). Through these efforts, the Corps and SCVWD have maximized riprap or rubble removal along the Guadalupe River.

The Corps and SCVWD believe that fish habitat enhancement can be accomplished in a manner that mutually benefits fish, wildlife, and vegetation. For example, planting riparian vegetation and SRA cover vegetation would replace habitat quantity and value for riparian wildlife species and reduce water temperatures in the Guadalupe River, which would benefit steelhead and salmon.

SCVWD is considering ways to maintain or enhance fish habitat as part of other projects in the Guadalupe River watershed. These projects include the Upper Guadalupe River Flood Control Project, the Guadalupe Creek Restoration Project and the SCVWD Fish Ladder Construction Program. For example, the Upper Guadalupe River Project proposes to implement fish passage improvements that would provide access for migratory fish to approximately 10.9 miles of upstream fish habitat on Alamitos Creek (Section 6.2.1.7, "Upper Guadalupe River Flood Control Project"). In addition, SCVWD is participating in the Fisheries and Aquatic Habitat Collaborative Effort (FAHCE), which will identify factors limiting steelhead and chinook salmon populations in the Guadalupe River, Coyote Creek, and Stevens Creek watersheds, and recommend measures to address limiting factors.

Response to Comment EPA-18

Impacts in Segments 1 and 2 include 6.44 acres of riparian habitat and 3,570 lf of SRA-cover habitat (Tables 5.4-2 and 5.4-3).

Vegetation impacts were based on pre-project conditions. The impact assessment used 1992 aerial photos which show pre-project conditions. Pre-project conditions were used in the HEP analysis. Mitigation amounts for riparian vegetation and SRA cover included both the direct effects of constructing Segments 3A and 3B and the effects of the already constructed Segments 1, 2, and 3C on SRA cover vegetation, riparian vegetation, temperature, and fish. Information in the Draft EIR/SEIS discloses the full effects of constructing Segments 1, 2, and 3, as well as operating the Guadalupe River Project with Bypass System Alternative.

Response to Comment EPA-19

The Upper Guadalupe River Project and the Lower Guadalupe River Project are the known flood protection projects in the Guadalupe River watershed; both of these projects are addressed in Chapter 6, "Cumulative Impacts and Other Required Analyses." SCVWD Stream Maintenance Program is addressed in Section 6.2.1.10, "Related Projects in the Guadalupe River Watershed," because it was in the planning stages at the time of the release of the Draft EIR/SEIS. In August 2000, SCVWD issued a report, the "Santa Clara

Valley Water District Stream Maintenance Program," that documents the results of extensive collaboration with Stream Maintenance Program external stakeholders. A Program EIR for the Stream Maintenance Program is expected to be issued in 2001. SCVWD Stream Maintenance Program is not yet an approved program and it will not be implemented until after the Program EIR and a Habitat Conservation Plan have been completed and all necessary permits obtained. However, additional information is now available on the potential affects of the Stream Maintenance Program, and this information is included in Chapter 6. In addition, information about the Virginia Street Bank Stabilization Project and the Alviso Ring Levee Wetland Mitigation and Restoration Project has been added to Chapter 6.

Environmental restoration efforts for mercury contamination have occurred in the Guadalupe River watershed, particularly at the Almaden Quicksilver County Park adjacent to Guadalupe Creek. Hazardous waste clean up activities at the Almaden Quicksilver County Park have been actively pursued by the California Department of Toxic Substances Control (DTSC). DTSC announced its certification of the Almaden Quicksilver County Park in February 2000. Certification indicates that all appropriate removal and remedial actions have been completed. Remedial work included site containment and stabilization through placement of vegetated soil covers and streambank stabilization. The DTSC's clean up efforts have been added to Section 6.2.1, "Projects Addressed in the Cumulative Impact Analyses," under "Almaden Quicksilver County Park Project."

Additional commercial/residential/mixed-use development projects that have been added to the cumulative impact analysis include:

- Additional components of the San Jose International Airport Expansion Plan and corrections based on Response to Comment SJ-1
- The proposed Automated People Mover at the San Jose International Airport
- The proposed Boston Property Project between Woz Way and San Carlos Street and adjacent to Almaden Boulevard
- The John P. McEnery Park Site Improvements
- The Los Gatos Creek Trail Project

The addition of these projects does not change the conclusions of the cumulative impact analysis set forth in the Draft Report.

The following changes are made to the Draft EIR/SEIS:

Pages 6-2 to 6-4. Section 6.2.1, "Projects Addressed in the Cumulative Impact Analyses," is modified as follows:

6.2.1 Projects Addressed in the Cumulative Impact Analyses

Eighteen major projects in the Guadalupe River system have been approved, are under construction, or have been proposed by other public agencies:

- Guadalupe River Park Project

- State Route 87 Freeway Upgrade Project from Highway 101 to Julian Street
- State Route 85 Transportation Corridor Project
- San Jose International Airport Expansion Plan
- Santa Clara Valley Water District Fish Ladder Construction Program
- Guadalupe Creek Restoration Project
- Upper Guadalupe River Flood Control Project
- Lower Guadalupe River Flood Protection Project
- Stormwater Pump Installations
- Virginia Street Bank Stabilization Project
- Santa Clara Valley Water District Stream Maintenance Program
- Alviso Ring Levee Wetland Mitigation and Restoration Project
- Almaden Quicksilver County Park Project
- Boston Property Project
- John P. McEnery Park Site Improvements
- Los Gatos Creek Trail Project
- Vasona Light Rail Extension Project
- Core Location Project

When combined with the Guadalupe River Project with Bypass System Alternative, these projects have the potential to produce cumulative impacts on resources in the project area and are therefore addressed in this cumulative impact analysis. These projects are discussed in detail below.

Page 6-5. Section 6.2.1.2, "State Route 87 Freeway Upgrade Project," is modified as follows:

6.2.1.2 State Route 87 Freeway Upgrade Project

The State Route 87 Freeway Upgrade Project will convert the existing four-lane Guadalupe Parkway (State Route 87) to a six-lane freeway between Julian Street and Highway 101 and includes the construction of the Skyport Bridge. State Route 87 improvements are designed to relieve severe congestion along Guadalupe Parkway and to improve access to downtown San Jose, the Civic Center area, and San Jose International Airport. The target date for completion of the State Route 87 Freeway Upgrade Project is December ~~2001 (City of San Jose, 1999)~~ 2003 (Gonzales, pers. comm.). The SCVWD has been a full member of the State Route 87 Project Development Team since 1987. Over the past 13 years, SCVWD staff has participated in numerous State Route 87 meetings and workshops, especially those

regarding locations where the freeway project interfaces with the Guadalupe River. The Corps and SCVWD will continue to coordinate with the California Department of Transportation and the Valley Transportation Authority on the design and construction activities of the Guadalupe River Project and the State Route 87 Freeway Upgrade Project.

Freeway widening and bridge construction from Highway 101 to New Julian Street resulting from implementation of the State Route 87 Freeway Upgrade Project will affect 1.09 acres of wetlands under the jurisdiction of the Corps and ~~4.54~~ 5.72 acres of riparian habitat. The project includes construction of a top-of-bank trail along the east bank of Segments 1 and 2 of the Guadalupe River. Construction began in 1999 and will be completed in 2001. This project will have no long-term impacts on fish resources.

Mitigation for loss of riparian habitat and wetlands that would result from the State Route 87 Freeway Upgrade Project requires the planting of ~~7.29~~ 10.95 acres of riparian habitat adjacent to the east side of the Guadalupe River ~~and establishing 1.09 acres of wetlands~~ (David Powers and Associates, 1993, Vincent, pers. comm., Hessler, pers. comm.).

Page 6-5. Section 6.2.1.4, "San Jose International Airport Expansion Plan," is modified as follows:

6.2.1.4 San Jose International Airport Expansion Plan

The San Jose International Airport Expansion Plan includes construction between 2002 and 2004 of a consolidated rental car garage on the east side of the Guadalupe River at the downstream end of Reach A and construction in 2001 of a two-lane access bridge to the rental car garage approximately 1,200 feet downstream from Airport Parkway that will connect Airport Boulevard and the existing parking lot/future garage. No impacts on riparian vegetation or wetlands are expected. ~~proposes replacement of the Airport Parkway Bridge, construction of a new bridge south of the present bridge site, and widening of Airport Boulevard. Project construction started in 1998; the anticipated completion date is 2001. Potential impacts on riparian vegetation related to bridge construction will be mitigated in accordance with the mitigation plan proposed for the Guadalupe River Project with Proposed Action Bypass System Alternative. Widening of Airport Boulevard will not have adverse impacts on biotic resources.~~

Page 6-6. First paragraph of Section 6.2.1.6, "Guadalupe Creek Restoration Project," is modified as follows:

6.2.1.6 Guadalupe Creek Restoration Project

The Guadalupe Creek Restoration Project site is bordered upstream by Masson Dam, downstream by Almaden Expressway, to the north by residential development and the Los Capitancillos percolation pond system, and to the south by Coleman Road. SCVWD is proposing to establish an estimated 12,044 lf of SRA cover vegetation and improve aquatic habitat at

this site to offset environmental impacts associated with future SCVWD projects. An ~~initial study/environmental assessment~~ EIR/EIS addressing the potential effects of the Guadalupe Creek Restoration Project is expected to be completed in ~~summer 2000~~ 2001. The Guadalupe Creek Restoration Project is scheduled for implementation in ~~fall 2000~~ 2001.

Page 6-7. Second paragraph of Section 6.2.1.7, "Upper Guadalupe River Flood Control Project," is modified as follows:

The Corps' 1985 Guadalupe River Interim Feasibility Report and EIS (U.S. Army Corps of Engineers, 1985; Section 1.6.1, "Guadalupe River Interim Feasibility Report and Environmental Impact Statement (1985)), did not find economic justification for proposed channel modifications upstream from I-280. SCVWD, in the late 1980s, initiated an independent planning study for the Upper Guadalupe River Project. Planning and design of the Upper Guadalupe River Project continued concurrent with construction of Segments 1 and 2 of the Authorized Project. In 1997, SCVWD and the Regulatory Branch of the Corps, San Francisco District, prepared a draft EIR/EIS for the Upper Guadalupe River Project (Santa Clara Valley Water District and U.S. Army Corps of Engineers, 1997). A final EIR/EIS ~~will be issued in~~was issued in July 2000, ~~which includes Volume IX, "Additional Information," for public review~~ (Santa Clara Valley Water District and U.S. Army Corps of Engineers, ~~*in prep*~~ 2000a).

Page 6-13. New Sections 6.2.1.10 to 6.2.1.16 are added after Section 6.2.1.9 as follows:

6.2.1.10 Virginia Street Bank Stabilization Project

SCVWD Virginia Street bank stabilization project, completed in 1997, involved stabilizing and protecting approximately 150 feet of eroded bank along the eastern side of the Guadalupe River, downstream from Virginia Street. The site is located upstream from Segment 3C of the Guadalupe River Project in a residential neighborhood. The purpose of the project was to stabilize the streambank, preventing further erosion and undermining of the adjacent roadway, McClellan Avenue. The work consisted of repairing the failing bank and placing approximately 240 cubic yards of soil and 280 cubic yards of rock riprap slope protection along the bank. Voids in the rock riprap were filled with soil and planted with live cuttings of native species. In order to accomplish the proposed work, a temporary dirt access road was constructed, and the site was dewatered prior to construction. No impacts on riparian vegetation or jurisdictional wetlands occurred with the project. After high floodflows in 1998, the area was repaired under emergency conditions. (Reiller, pers. comm.).

6.2.1.11 Santa Clara Valley Water District Stream Maintenance Program

SCVWD Stream Maintenance Program will provide long-term guidance to SCVWD to effectively implement routine stream maintenance projects in a cost-effective and environmentally sensitive manner. The Stream Maintenance Program report (Santa Clara Valley Water District, 2000), issued

in August 2000, is a process and policy document that will be adopted by SCVWD and used in obtaining long-term permits for routine stream maintenance activities. The Stream Maintenance Program addresses all routine stream maintenance activities, such as sediment removal, vegetation management, and bank protection, within SCVWD's jurisdiction. Approximately 829 miles of streams and 41 miles of canals are under SCVWD's jurisdiction in the Santa Clara Basin and the Pajaro River Basin. The Stream Maintenance Program report documents the results of extensive collaboration with Stream Maintenance Program external stakeholders. A Program EIR for the Stream Maintenance Program is expected to be issued in 2001. SCVWD Stream Maintenance Program is not yet an approved program, and it will not be implemented until after the Program EIR and Endangered Species Act compliance have been completed and all necessary permits obtained.

The Stream Maintenance Program report estimates that proposed future sediment removal and vegetation management activities could affect approximately 76 acres of riparian vegetation (including native and nonnative species), 100 acres of nontidal wetlands, and 30 acres of tidal wetlands. Proposed mitigation for potential adverse environmental effects associated with the Stream Maintenance Program has three components: (1) policies, implementation measures, and BMPs organized by type of activity and designed to avoid and minimize impacts; (2) compensatory mitigation through restoration and preservation; and (3) mitigation for potential impacts on sensitive species. A proposed compensatory mitigation package for significant residual impacts of the Stream Maintenance Program includes: (1) watershed and habitat protection through preservation of existing high-quality habitat, primarily in upper watershed areas; (2) restoration of riparian habitat through exotic pest plant removal and riparian re-vegetation, primarily in mid-watershed areas; (3) restoration and protection of tidal wetlands in the lower watershed, and (4) creation of nontidal wetlands. (Santa Clara Valley Water District, 2000).

6.2.1.12 Alviso Ring Levee Wetland Mitigation and Restoration Project

The Alviso Ring Levee Wetland Mitigation and Restoration Project, conducted by the City of San Jose Public Works Department, is located near the community of Alviso along the southern edge of the South San Francisco Bay, adjacent to the New Chicago Marsh and between Alviso Slough and Artesian Slough. The project, completed in 1997, involves the creation of 6.93 acres of seasonal wetlands on three sites and the restoration of 3.14 acres of former wetlands on four sites. The objective of the mitigation and restoration project was to create seasonal wetlands to replace the functions, values, and losses over time of the 3.14 acres of seasonal wetlands covered by the placement of the ring levee. Construction activities included removing illegal fill and debris as necessary, removing a levee at the largest of the mitigation sites to allow introduction of water from an adjacent salt marsh, grading and filling to achieve ground elevations appropriate for establishment of marsh

habitat, and planting with native seeds and root cuttings to establish desired vegetation. (Lee, pers. comm.).

6.2.1.13 Almaden Quicksilver County Park Project

The Almaden Quicksilver County Park, located between Alamitos and Guadalupe Creeks, is a 3,984-acre undeveloped park southeast of Los Gatos on the northeast ridge of the Santa Cruz Mountains. The park supports limited public use, primarily horseback riding and hiking. The Santa Clara County Parks and Recreation Department purchased most of the park in 1973 and 1975, and there was an additional purchase in 1993. A Trails Master Plan was completed in 1998 (County of Santa Clara, 1998b) and is being implemented. The Trails Master Plan includes improvements to approximately 30 miles of existing trails and construction or realignment of approximately 2 miles of trails. No impacts on riparian vegetation or wetlands are expected with the project (County of Santa Clara, 1998a, Mark, pers. comm.).

The park is Santa Clara County's second largest park and has been designated as a historical park. Much of the park's historical significance stems from cinnabar (mercury sulfide) mining from the mid-1800s until 1976. Historical mining activities in some parts of the park have resulted in elevated concentrations of mercury in mine waste materials. Hazardous waste clean up activities at the Almaden Quicksilver County Park have been actively pursued by the DTSC. Five "hot spots" required remediation: the Hacienda Furnace Yard, the Mine Hill area, the Enriquita Mine Retort, the San Mateo Mine Retort, and the Senador Mine Retort. DTSC announced its certification of the Almaden Quicksilver County Park in February 2000. Certification indicates that all appropriate onsite removal and remedial actions have been completed. Remedial work included site containment and stabilization through placement of vegetated soil covers and streambank stabilization. However, mercury from the mines has migrated down the watershed; cleanup activities were limited to the mine site.

6.2.1.14 Boston Property Project

The proposed Boston Property Project involves construction of three 19-story office buildings containing office space and parking as well as outdoor café areas on a 3.7-acre site in downtown San Jose, west of the convention center between Woz Way and San Carlos Street and between the Guadalupe River and Almaden Boulevard. The three-phase Class A office development totals 863,186 rentable sf and approximately 2,170 parking spaces. There would be six levels of parking above grade and 3 levels below grade for each building. Building 1, which would be located at the southern end of the site, would be approximately 277 feet high and include 349,260 gross sf of office space and 360,231 sf of parking (893 spaces). Building 2, which would be located in the middle of the site, would be approximately 256 feet high and include approximately 371,749 gross sf of office space and 212,721 sf of parking (614 spaces). Building 3, which would be located at the north end of the project

site, would be approximately 230 feet high and include approximately 320,713 gross sf of office space and 255,765 sf of parking (663 spaces). (Burton, pers. comm.).

An addendum to the Downtown Strategic Plan Programmatic EIR that addresses the proposed Boston Property Project is expected to be completed in late 2000. The proposed buildings would be set back from the edge of the existing riparian corridor and riverwalk trail along the Guadalupe River by as much as 70 feet in some areas and 5 to 25 feet in other areas. The café elements would be 0 to 15 feet from the riparian corridor. The project would likely result in increased human disturbance of the riparian corridor. The buildings, depending on their design and lighting, could result in an increase in bird injury or death caused by collisions with windows. The proposed project could result in decreased value of the adjacent riparian corridor to wildlife, particularly birds. (Stephens, pers. comm.).

6.2.1.15 John P. McEnery Park Site Improvements

The John P. McEnery Park is located immediately east of the Guadalupe River on the south side of San Fernando Street and 310 feet west of Almaden Boulevard. The San Jose Redevelopment Agency's improvement project at the park involves redesigning and renovating the park for families and children. The existing tennis courts are being removed and replaced with a water fountain and water channel play area, restrooms, picnic tables, and children's play equipment and lawn. No impacts on riparian vegetation or wetlands will occur with the project. The central element of the park is the fountain and water channel, which serve both to educate visitors about the natural history of rivers and provide water play opportunities for children. The improvements are currently under construction and are expected to be completed in December 2000.

6.2.1.16 Los Gatos Creek Trail Project, Phase IIA.A

The City of San Jose's Los Gatos Creek Trail Project, Phase IIA.A, was completed in 1998. The project included construction of approximately 3,500 lf of trail between Willow Street and Meridian Avenue and installation of a prefabricated arched pedestrian/bicycle bridge that spans Los Gatos Creek immediately downstream from Leigh Avenue Bridge. The trail will be constructed along the top-of-bank of Los Gatos Creek; the majority of the trail will be on existing maintenance roads. A total of 0.25 acre of riparian vegetation was affected, and 0.62 acre of riparian vegetation was planted as mitigation. No impacts on wetlands occurred.

6.2.1.17 Vasona Light Rail Extension

The Vasona Light Rail Extension project is the construction and operation of an extension of the existing Light Rail Transit System in Santa Clara County. The lead agency for the project is the Santa Clara Valley Transit Authority. The project would provide light rail transit service to the Vasona Corridor, which extends approximately 11 miles from downtown San Jose, beginning

at the intersection of West San Carlos Street and Woz Way, to Los Gatos. The project would provide a direct connection to existing commuter rail service and the San Jose Arena. Impacts of the proposed project were evaluated in a joint EIS/EIR, which indicated that the project would result in significant adverse impacts on public safety, noise, land use, vegetation and wildlife and water quality. Impacts on public safety and noise would occur as a result of operation of the light rail extension. Construction of the project would impact 0.41 acres of wetlands, 0.23 acres of riparian habitat, and up to 187 mature trees. Water quality in Los Gatos Creek could be affected during construction. The EIS/EIR indicated that all significant adverse impacts would be reduced to a less than significant level by implementing appropriate mitigation measures.

6.2.1.18 CORE Location Project

The CORE Location Project is a development project in downtown San Jose. The project site is bounded by the UPRR No 4 track on the south and west, the UPRR rail yard on the north and the Guadalupe River riparian corridor on the east. The project site consists of existing warehouses, storage areas, parking lots, and loading zones. An existing buffer zone ranging from 35 to 105 feet separates the existing warehouses from the riparian corridor. The buffer zone is bare soil. The planned project is to demolish the existing structures and construct two buildings that will house data facilities. The buildings will be two stories tall and have a combined size of 400,000 square feet.

An assessment of the biotic resources of the project site and potential impacts on the riparian corridor was conducted in October 2000. The assessment indicated that vegetation within the proposed construction areas are limited to scattered small trees and shrubs. The assessment concluded that construction of the proposed buildings would not directly affect the Guadalupe River riparian corridor because the buildings would be located outside of the required 100-foot wide riparian setback. Temporary impacts on wildlife associated with the riparian corridor may occur as a result of noise and other disturbances during construction.

Page 6-13. Section 6.2.1.10 is renumbered to Section 6.2.1.19 and a new second paragraph is added as follows:

~~6.2.1.10~~ 6.2.1.19 Related Projects in the Guadalupe River Watershed

Additional projects, described below, are under consideration for implementation in the Guadalupe River watershed. Quantitative impacts of these projects are not known at this time because the projects are not yet fully defined. However, it is important to understand the relationship between these projects and the Guadalupe River Project with ~~Proposed Action~~ Bypass System Alternative.

Automated People Mover at San Jose International Airport. An automated people mover, possibly like a monorail, is proposed to be constructed to

connect the airport with the light rail station on North First Street. Two potential Guadalupe River crossings are under consideration, one approximately 800 feet downstream from the proposed two-lane access bridge to the rental car garage and another between Skyport Bridge and Airport Parkway. Construction is planned for 2002 to 2007. Environmental compliance has not been initiated for the project, but impacts are expected to be minimal because the people mover will be narrow and elevated (Hessler, pers. comm.).

Page 6-14. Last paragraph is modified as follows:

Guadalupe Fisheries Management Plan. The expected goal of SCVWD's Guadalupe Fisheries Management Plan is to develop a comprehensive management plan to preserve, protect, and enhance the fishery and aquatic resources of the Guadalupe River and those tributaries capable of supporting or contributing to these resources. ~~The~~ SCVWD intends to prepare and implement the Guadalupe Fisheries Management Plan ~~is in the early preplanning stages~~in the near future.

Page 6-15. Section number 6.2.1.11 in heading is deleted as follows:

~~6.2.1.11~~ Los Capitancillos Freshwater Wetland Mitigation Site Development Project. The Los Capitancillos Freshwater Wetland Mitigation Site Development Project is proposed on SCVWD-owned property adjacent to the Guadalupe Creek Restoration Project site near Masson Dam.

Page 6-25. A new paragraph is added after the first complete paragraph as follows:

Maintenance activities, such as debris removal, storm drain outlet maintenance, and minor repairs may cause temporary and intermittent disturbances of channel and bank sediments. However, in-channel maintenance activities affecting water quality are likely to be infrequent and are unlikely to be concentrated in any one area of the river. Consequently, long-term operations and maintenance of Guadalupe River flood protection facilities would not be anticipated to adversely affect beneficial uses of the river or result in the degradation of water quality. The cumulative impacts of incremental changes in the transport of wash load sediments would therefore be less than significant.

Regional Water Quality Controls. The City of San Jose is a participant in the Santa Clara Valley Nonpoint Source Pollution Control Program and a co-permittee to the Program's NPDES permit for municipal storm water discharges, issued by the RWQCB. This permit includes requirements for water quality monitoring, identification and elimination of illicit connections and illegal dumping to the stormdrain system, street cleaning, and public education programs. In addition, this permit requires more stringent standards for land use decisions and site design criteria. The City of San Jose's 2020 General Plan (City of San Jose, 1994) includes the following goals and policies that would reduce the potential for impacts on local and regional

water quality and mitigate potential water quality impacts on a less-than-significant level:

Natural Resources – Water Resources:

Policy 1. The City, in cooperation with the Santa Clara Valley Water District, should restrict or carefully regulate public and private development in watershed areas, especially those necessary for the effective functioning of reservoirs, ponds, and streams, and for the prevention of excessive situations.

Policy 3. The City should encourage the Santa Clara Valley Water District to restrict public access and recreational uses on water related lands when water quality could be degraded.

Policy 6. When new development is proposed in areas where storm runoff will be directed into creeks upstream from groundwater recharge facilities, the potential for surface water and groundwater contamination should be assessed and appropriate preventative measures should be recommended.

Policy 7. The City shall require the proper construction and monitoring of facilities storing hazardous materials in order to prevent contamination of surface water, groundwater, and underlying aquifers. In furtherance of this policy, design standards for such facilities should consider high groundwater tables and/or the potential for freshwater or saltwater flooding.

Policy 8. The City should establish nonpoint source pollution control measures and programs to adequately control the discharge of pollutants into the City's storm sewers.

Policy 9. The City should take a proactive role in the implementation of the Santa Clara Valley Nonpoint Source Pollution Control Program, as well as implementation of the City's local nonpoint source control and stormwater management program.

Natural Resources – Bay and Baylands:

Policy 5. The City should continue to participate in the Santa Clara Valley Nonpoint Source Pollution Control Program and take other necessary actions to formulate and meet regional water quality standards which are implemented through National Pollutant Discharge Elimination System permits and other measures.

Page 6-35. First paragraph and Table 6.2-4 are modified as follows:

Table 6.2-4 summarizes the approximate incremental and cumulative acreages of riparian habitat loss resulting from projects under construction or recently approved in the Guadalupe River watershed. Most of the impacts would be on cottonwood/willow forest, which has high botanical and wildlife values. The Upper and Lower Guadalupe River Projects and the Guadalupe River Project with ~~Proposed Action~~ Bypass System Alternative would contribute to impacts on approximately 27 acres of riparian habitat

(approximately 80 percent of the total in Table 6.2.4). A total of 100 percent of the riparian mitigation for the Guadalupe River Project with ~~Proposed Action~~ Bypass System Alternative has already been planted, 1 to 3 years prior to the implementation of project components that would result in approximately 50 percent of the impacts. The Upper Guadalupe River Project includes establishment of 65 percent of the proposed riparian forest mitigation prior to 4 percent of the impacts. The other projects addressed in this cumulative impact analysis will also fully mitigate for impacts on riparian habitat. The projects included in Table 6.2-4 include mitigation site protection plans and vegetation protection plans, which avoid or minimize impacts during construction and after mitigation plantings.

Because of the early mitigation for riparian losses, no significant indirect or cumulative impacts on riparian vegetation are expected. No additional mitigation for the incremental impact of the Guadalupe River Project with ~~Proposed Action~~ Bypass System Alternative is required.

TABLE 6.2-4. Projects with Direct Cumulative Impacts on the Riparian Habitat in the Guadalupe River ~~Main Stem~~ Watershed and Mitigation Required (acres)

	Impact	Mitigation
Guadalupe River Project with ~~Proposed Action~~ Bypass System Alternative	14.12	21.0
Guadalupe River Park Project	0.0[a]	0.0[a]
State Route 87 Freeway Upgrade from Highway 101 to Julian Street	~~4.54~~ 5.74	~~7.29~~ 10.95
State Route 85 Transportation Corridor Project	0.1[b]	12.1
Santa Clara Valley Water District Fish Ladder Construction Program	0.1	0.2
Guadalupe Creek Restoration Project	~~2 to 5~~ 0.51	~~2 to 5~~ 1.00
Upper Guadalupe River Flood Control Project	10.45	20.89[c]
Lower Guadalupe River Flood Protection Project	2.5[d]	2.5[e]
SCVWD Stream Maintenance Program (proposed)	76[f]	75[f]
Los Gatos Creek Trail Project Phase IIA.A	0.25	0.62
Vasona Light Rail Extension Project	0.23	0.23
Total	**~~33.81 – 36.81~~ 110.00**	**~~65.98 – 68.98~~ 144.49**

[a] Riparian impacts and mitigation are included in the Guadalupe River Project with ~~Proposed Action~~ Bypass System Alternative.

[b] The project will directly affect 0.1 acre of riparian vegetation along the Guadalupe River main stem and indirectly affect 4.5 acres on Los Gatos and Ross Creeks. Mitigation for loss of riparian habitat requires planting 12.1 acres of riparian vegetation onsite and 0.2 acre offsite (Monette, 1992).

[c] An additional 5.53 acres will be established by SCVWD for use as mitigation for other projects.

[d] Assumes the sediment removal alternative is selected.

[e] Estimate.

[f] Estimate: includes proposed revegetation, enhancement, and land management (Santa Clara Valley Water District, 2000). Amount could range from 75 lf to 600 lf.

Page 6-36. Section 6.2.5.3, "Wetlands," is modified as follows:

6.2.5.3 Wetlands

The Guadalupe River Project with ~~Proposed Action~~ Bypass System Alternative would not affect jurisdictional wetlands (Section 5.4.3.3, "Wetlands"). The Guadalupe Creek Restoration Project, ~~and~~ the Upper Guadalupe River Project, and the Vasona Light Rail Extension Project would result in impacts on ~~1.23 acres and 1.47~~ 0.94, 1.47, and 0.41 acres of jurisdictional wetlands, respectively. The wetlands that would be affected by these projects are all riverine wetlands. The proposed SCVWD Stream Maintenance Program could affect approximately 100 acres of nontidal wetlands and 30 acres of tidal wetlands in Santa Clara and Pajaro River Basins. The Alviso Ring Levee affected 3.14 acres of seasonal wetlands. The projects will mitigate impacts on at least a 1:1 basis. The other projects listed in Section 6.2.1, "Projects Addressed in the Cumulative Impact Analyses," will not affect wetlands. The Alviso Ring Levee Wetland Mitigation and Restoration Project includes the creation of 6.93 acres of seasonal wetlands and restoration of 3.14 acres of seasonal wetlands. Impacts on other waters will be temporary. The impacts of these projects will not result in significant cumulative impacts because the impacts have been or will be fully mitigated. The potential impacts of the Lower Guadalupe River Project on wetlands can only be estimated at this time. If the sediment removal alternative is selected, up to 65 acres of wetlands and an estimated 30 acres of other waters of the United States could be affected. Any impacts of the Lower Guadalupe River Project on wetlands will be analyzed in the environmental documents for that project. The cumulative impacts of the Lower Guadalupe River Project in association with other past, present, and reasonably foreseeable future projects will also be addressed. If cumulative impacts on wetlands are identified, the Lower Guadalupe River Project environmental documents will determine the appropriate mitigation.

Page 6-42. Section 6.2.6.1, "Overview of Disturbance Resulting from Human Activities," is modified as follows:

6.2.6.1 Overview of Disturbance Resulting from Human Activities

Implementation of projects in the Guadalupe River watershed would result in substantial long-term increases in human activity along the Guadalupe River riparian corridor. In addition, SCVWD has a policy governing joint public use of SCVWD facilities (Santa Clara Valley Water District, Resolution No. 74-38) that would allow future park projects to use floodway-maintenance roads as trails. After construction of the projects has been completed, increased human activities would include recreational uses, revegetation monitoring, and floodway-maintenance work (Appendix 7, "Recreation Plan"). These activities could cause increased disturbance of wildlife compared to current levels, especially during the spring breeding season for birds.

This cumulative impact would be greater than the sum of the impacts of each project separately because the impacts would occur close together both in time and space. Wildlife would therefore have more difficulty avoiding or tolerating disturbances. The contribution to wildlife disturbance of the Guadalupe River Project with ~~Proposed Action~~ Bypass System Alternative and the Guadalupe River Park Project would be minimized by implementing the environmental commitments of the Proposed Project: the vegetation protection plan, planting riparian and SRA cover vegetation, and protecting the compensatory mitigation sites (Section 3.4.3, "Environmental Commitments"). The Upper Guadalupe River Project and the Guadalupe Creek Restoration Project would also include similar measures to minimize the impacts of recreational use on mitigation sites. The other projects listed in Section 6.2.1, "Projects Addressed in the Cumulative Impact Analysis," with the possible exception of the Boston Property Project, discussed below, would not result in long-term increases in human activity in the Guadalupe River riparian corridor. The Lower Guadalupe River Project has not yet developed specific plans for accommodating recreational use, but it is expected that measures similar to those described above will be incorporated into the project design. The cumulative impact of disturbance to wildlife resulting from human activities, due to the projects discussed above, is considered less than significant because wildlife in the affected areas are already subjected to substantial disturbance from recreational use and urban activities adjacent to the project areas and because urban and recreational disturbances would increase even in the absence of the major projects listed in Section 6.2.1, "Projects Addressed in the Cumulative Impact Analysis." In addition, the recreational trails will help to concentrate recreational use in specific corridors that are outside wildlife habitat areas. Therefore, no mitigation is required.

The Boston Property Project proposes three buildings that would be set back from the edge of the existing riparian corridor and riverwalk trail along the Guadalupe River by as much as 70 feet in some areas and 5 to 25 feet in other areas. The café elements would be 0 to 15 feet from the riparian corridor. The project would likely result in increased human disturbance of the riparian corridor. The buildings, depending on their design and lighting, could result in an increase in bird injury or death caused by collisions with windows. The proposed project could result in decreased value of the adjacent riparian corridor to wildlife, particularly birds (Stephens, pers. comm.).

An addendum to the Downtown Strategic Plan Programmatic EIR that addresses the proposed Boston Property Project is expected to be completed in late 2000. The addendum to the Downtown Strategic Plan Programmatic EIR must address the potential for impacts on wildlife using the riparian corridor and the SRA cover vegetation proposed as mitigation for the Guadalupe River Project with ~~Proposed Action~~ Bypass System Alternative and either avoid or fully mitigate those impacts. The project proponents of the Boston Property Project must coordinate with the Corps and SCVWD regarding their proposed design and the potential effect on the SRA cover

vegetation proposed as mitigation for the Guadalupe River Project with ~~Proposed Action~~ Bypass System Alternative.

Response to Comment EPA-20

Guidance contained in "Considering Cumulative Impacts Under the National Environmental Policy Act" (Council on Environmental Quality, Office of the President, 1997) is reflected extensively in the Draft EIR/SEIS.

Analysis of the cumulative impact of projects in the Guadalupe River watershed during scoping and during the screening of alternatives was instrumental in assisting in the selection of the Bypass System Alternative (Chapter 2, "Development and Evaluation of Alternative Project Modifications"). The Bypass System Alternative was selected to avoid and minimize cumulative effects on SRA cover vegetation, water temperature, and fish, for example, as specifically recommended in the CEQ guidance (Chapter 1, Table 1-5, and Chapter 4, page 45, of the Council on Environmental Quality [CEQ] guidance.).

Both in Chapter 4, "Affected Environment," and Chapter 6, "Cumulative Impacts and Other Required Analyses," the historical context of resources of concern are described to characterize the current status of resources in the Guadalupe River watershed (Chapter 3 of the CEQ guidance). The analysis conforms to CEQ guidance on geographic areas recommended to be covered for resources of concern (Chapter 2, Table 2-2, of the CEQ guidance). For example, water quality, vegetation resources, and fish resources are analyzed from a watershed perspective in accordance with the CEQ guidance. In addition, the cumulative impact analysis has been expanded beyond the timeframe of project-specific direct effects, as recommended by the CEQ guidance.

Extensive use is made in the draft EIR/SEIS of numerous methods for cumulative impact analysis, as recommended in the CEQ guidance (Chapter 5, Table 5-3, and Appendix A of the CEQ guidance). Some examples include conducting an extensive scoping process, hydrologic and water temperature modeling, and trend analyses and ecosystem analyses as exemplified by the HEP analyses. The assessment of the interrelationship of SRA cover vegetation to water temperature and to fish resources is an example of the comprehensive assessment of cause and effect relationships that was employed in the Draft EIR/SEIS. The Draft EIR/SEIS (Appendix 3, "Mitigation and Monitoring Plan") also includes an adaptive management strategy, as recommended in the CEQ guidance (Chapter 4, page 46, of the CEQ guidance).

In summary, the cumulative impact analysis in the draft EIR/SEIS fully reflects guidance provided by CEQ and results in an integrated and comprehensive analysis of cumulative impacts in the Guadalupe River watershed.

Response to Comment EPA-21

SCVWD has expressly committed to long-term maintenance and monitoring of the Guadalupe River Project with Bypass System Alternative and annual reporting on the maintenance and monitoring (years 4-100) as described in the Draft EIR/SEIS and in Section 4.10, "Responsibilities for MMP Implementation" of the MMP (Volume 2, Appendix 3). Section 4.10 of the MMP also states that monitoring will continue for the life of the Guadalupe River Project, subject to the Adaptive Management Team's continuing oversight, or until the Adaptive Management Team has determined that the measurable objectives have been met. The Adaptive Management Team will consist of representatives from SCVWD, the Corps (until the Guadalupe River Project is turned over to SCVWD), the City of San Jose, SWRCB, RWQCB, USFWS, NMFS, CDFG, GCRCD, Pacific Coast Federation of Fishermen's Associations, and Trout Unlimited. The Final Operation and Maintenance Manual for the Guadalupe River Project (O&M Manual) will include all MMP requirements, and SCVWD will be required to follow the O&M Manual for maintenance and operation of flood protection, mitigation, and recreation features (Draft EIR/SEIS; Section 3.4.4.2, "Maintenance").

SCVWD and the City of San Jose have drafted a separate Operation and Maintenance Agreement that will transfer the operation and maintenance responsibilities of the recreation features to the City of San Jose. This agreement, not yet executed, is in accordance with the SCVWD/City of San Jose/Redevelopment Agency of San Jose Three Party Agreement, executed on March 30, 1992. The O&M Manual is a legally binding agreement between the Corps and SCVWD. SCVWD will annually budget funds for the required maintenance and monitoring of the Guadalupe River Project and annual reporting.

SCVWD has demonstrated commitment and reliability with regard to long-term biological monitoring on other projects. For example, the Coyote Creek Flood Protection project also represents a 100-year commitment to vegetation, fisheries, and wildlife monitoring. Most of the mitigation features have been installed and are now under long-term maintenance and monitoring. The long-term monitoring has been completed on an annual basis for the last 10 years and is continuing.

Response to Comment EPA-22

Please see Response to Comment EPA-10 and Figure 4.2-1 referenced in that response.

Response to Comment EPA-23

The Draft EIR/SEIS is modified to indicate the requirements of Section 402.

The following change is made to the Draft EIR/SEIS:

Page 1-18. Section 1.5.1.4, "Clean Water Act," is modified as follows:

- ~~**Erosion Control Plan.** Erosion and sediment delivery to the Guadalupe River will be minimized during project construction; related efforts will include measures to minimize the potential for sediment to enter the river and interim soil stabilization measures pending establishment of vegetative cover. As part of the stormwater pollution prevention plan (SWPPP) required for project construction, the erosion and sediment control plan will be prepared and incorporated into project construction plans and specifications. The selected contractor(s) will be responsible for implementing the erosion and sediment control plan under Corps oversight, as required by the permitting process of the National Pollutant Discharge Elimination System (NPDES).~~

Fishery Mitigation Plan. The design of the Guadalupe River Project includes a low-flow channel design for armored channel bed sections. The low-flow channel provides for fish passage and fish resting areas. The Guadalupe River Project also provides for operational standards for the secondary channel in Segment 2 and compensation for the effects of removing the U.S. Geological Survey (USGS) gaging weir upstream from the St. John Street Bridge. Table 4-1 of the MMP includes measurable objectives designed to ensure the maintenance in perpetuity of ~~perpetual~~ fish passage, fish-rearing habitat, and spawning gravels. Chapter 4 of the MMP also includes measures for the mitigation of adverse water temperature effects related to the project.

Section 402. Section 402 of the CWA prohibits the discharge of all pollution into surface waters unless permitted under the NPDES, which is administered by the EPA, or by a State agency with a federally approved control program. In California, Section 402 authority has been delegated to the SWRCB and is administered by RWQCBs.

Erosion and sediment delivery to the Guadalupe River will be minimized during project construction. Related efforts will include measures to minimize the potential for sediment to enter the river and interim measures to stabilize soil pending establishment of vegetative cover. As part of the SWPPP required for project construction, an erosion and sediment control plan will be prepared and incorporated into project construction plans and specifications. The selected contractor(s) will be responsible for implementing the erosion and sediment control plan under Corps supervision, as required by the permitting process of the NPDES.

Response to Comment EPA-24

The Corps will prepare a Final O&M Manual on the Guadalupe River Downtown Flood Protection Project for SCVWD. SCVWD, as the local sponsor, had agreed to perform these O&M responsibilities for the life (100 years) of the project. SCVWD has agreed to acquire the necessary permits to perform these O&M responsibilities. O&M responsibilities for the

recreational features of the project will be transferred from SCVWD to the City of San Jose following the execution of a separate Agreement. See Section 3.4.4.2, "Maintenance."

Response to Comment EPA-25

At the inception of the Collaborative in December 1997 (Section 2.1, "Plan Formulation"), participants deliberated about the appropriate composition of the group given its adopted mission of working to resolve remaining litigation issues related to completing the design of environmental mitigation sufficient to allow the flood protection project to move forward. Members reached an initial agreement that the Collaborative would comprise three types of organizations: Corps and SCVWD, potential litigants, and resource and water quality agencies with direct permitting roles in the construction of the Guadalupe River Flood Protection Project. At the time, the agencies with "direct permitting responsibility" were deemed to include SWQCB and RWQCB for water quality issues and NMFS, USFWS, and CDFG for issues related to fisheries and terrestrial habitat protection, ESA, and streambed alteration.

After the Dispute Resolution Memorandum (DRM) was signed and ratified in 1998, membership was briefly reconsidered. Collaborative members noted that each Collaborative member organization had not only signed the DRM, but also committed itself to implementing the agreements contained in the DRM. A decision was made to retain the same membership. There was neither a specific request at that time for EPA to join the Collaborative nor a specific discussion of adding EPA to the Collaborative.

Corps and SCVWD moved forward toward completion of a Draft EIR/SEIS in summer 2000, Collaborative members again discussed the composition of the group; they agreed that if EPA formally joined the Collaborative, EPA would logically be asked to take on the same commitment of signing the DRM and working towards its implementation. The Collaborative decided that EPA staff would be invited to meetings without the burden of formal Collaborative membership. Accordingly, EPA staff have been invited to attend Collaborative meetings beginning in late summer 2000 and Collaborative materials have been forward to EPA.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213

F/SWR4: MH

SEP 1 9 2000

Ms. Nina Bicknese
U. S. Army Corps of Engineers
Sacramento Division
1325 J Street
Sacramento, California 95814

Dear Ms. Bicknese:

The National Marine Fisheries Service (NMFS) has reviewed the General Re-Evaluation Report/Environmental Impact Report/Supplemental Environmental Impact Statement for the proposed modifications to the Guadalupe River Flood Control Project in downtown San Jose, California. NMFS has been active in the development of this project by participating on the Guadalupe River Flood Control Project Collaborative effort. As a result we are very familiar with the contents of the document and concur with its environmental conclusions and support the proposed mitigation measures. In addition, we have expressed our concerns and offered additional measures for conserving riverine habitat functions and values in our completed Biological Opinion in accordance with section 7 of the Endangered Species Act and our Essential Fish Habitat Conservation Recommendations in accordance with the Magnuson -Stevens Act that were submitted to your agency in August, 2000. Our only additional comment that we offer is that your agency and the Santa Clara Valley Water District continue to examine all opportunities for minimizing impacts to the Guadalupe River by: 1) reducing the amount of hardscape bank and river bottom armoring in the project whenever and wherever possible; 2) ensuring that all locations for onsite replacement and reestablishment of riparian vegetation and instream habitat functions are met ; 3) protecting and enhancing offsite mitigation actions that could expand the existing range of steelhead and fall-run chinook in the watershed; and, 4) insuring that all mitigation areas set aside as compensation for project impacts resulting from this project or any other project will not be disturbed or impacted during construction activities.

NMFS-1
NMFS-2
NMFS-3
NMFS-3
NMFS-4

Thank you for this opportunity to comment and we look forward to continuing our working relationship with you and your agency.

Sincerely yours,

for [signature]

Rebecca Lent, Ph.D.
Regional Administrator

U.S. DEPARTMENT OF COMMERCE, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, NATIONAL MARINE FISHERIES SERVICE, REBECCA LENT (SEPTEMBER 19, 2000)

Response to Comment NMFS-1

Comment noted. The Corps and SCVWD recognize the important contributions made by NFMS to the development of the Downtown Guadalupe River Flood Protection Project through the collaborative effort.

On August 11, 2000, NMFS provided Essential Fish Habitat (EFH) Conservation Recommendations for chinook salmon -to the Corps for the Guadalupe River Project . These EFH conservation recommendations were included in the NMFS Biological Opinion for the Guadalupe River Project, located in Appendix 2, "Pertinent Correspondence". In accordance with the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) and 50 CFR 600.920(j), the Corps and the Santa Clara Valley Water District gave these recommendations full consideration as we developed the Final GRR/EIR-SEIS for the Guadalupe River Project. Pursuant to section 305 (b)(4)(B) of the MSFCMA, the Corps will provide the response required by the MSFCMA to the NMFS at least 10 days before the Record of Decision on the Final GRR/EIR-SIES is signed.

Response to Comment NMFS-2

The amount of riverbank and bottom armoring has been reduced to the greatest extent practicable while still meeting the project objectives of safely conveying flows up to 17,000 cfs and providing recreational elements compatible with the local recreation plans and the 1991 GDM. Refinements to the design of the recreation elements could further reduce the amount of riverbank and bottom armoring required while still meeting the project objectives if portions of the trail system are realigned from the river channel to the top of bank, as reflected in the Refined Bypass System Alternative.

Response to Comment NMFS-3

Onsite riparian (i.e., SRA cover vegetation) mitigation opportunities are being maximized based on existing conditions, proposed project features, and hydraulic constraints. To ensure that mitigation planting are successful, the Corps and SCVWD will implement the mitigation and monitoring program discussed in detail in the MMP (Volume 2, Appendix 3 of the Draft EIR/SEIS). The Corps and SCVWD believe that the measures described in the MMP will ensure that the objectives of the onsite mitigation are met.

Response to Comment NMFS-4

One objective of the Guadalupe River Project with Bypass System Alternative (Section 1.2.4) is to allow for the successful migration of anadromous fish through the project area and to

replace the amount, quality, and value of anadromous fish habitat that may be affected. Although expanding the existing range of anadromous fish is not a stated objective of the Guadalupe River Project, mitigation occurring on Guadalupe Creek is expected to enhance anadromous fish habitat.

Response to Comment NMFS-5

Except for removing the bulkheads from the inlets and outlets of the bypasses, mitigation associated with Guadalupe River Flood Protection Project would occur during or after the flood protection elements are completed. Vegetation planted as mitigation in Segments 1 and 2, the Woz Way to Park Avenue Bypass Reach, and Reach A would not be disturbed during construction because construction activities would only occur in Segments 3A, 3B, and 3C Phase 3. Removing bulkheads from the inlets and outlets of the bypasses would not affect mitigation plantings because no such plantings occur in the vicinity of the inlets or outlets.

United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
600 Harrison Street, Suite 515
San Francisco, California 94107-1376

July 31, 2000

ER00/492

Lieutenant Colonel Michael J. Walsh
U.S. Army Corps of Engineers
Sacramento District
1325 J Street
Sacramento, CA 95814

Dear Lt. Col. Walsh :

The Department of the Interior has reviewed the Draft Integrated General Re-Evaluation Report/Environmental Impact Report/Statement for the Proposed Modifications to the Guadalupe River Project, Downtown San Jose, Santa Clara County, California, and has no comments to offer. USDOI-1

Thank you for the opportunity to review this document.

Sincerely,

Patricia S Port

Patricia Sanderson Port
Regional Environmental Officer

cc:
Director, OEPC, w/original incoming
Regional Director, FWS, Portland

UNITED STATES DEPARTMENT OF THE INTERIOR, OFFICE OF THE SECRETARY, PATRICIA SANDERSON PORT (JULY 31, 2000)

Response to Comment USDOI-1

Comment noted.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846

IN REPLY REFER TO:
HC-COE

August 29, 2000

District Engineer
Corps of Engineers, Sacramento District
ATTN: Nina Bicknese
1325 J Street
Sacramento, California 95814-2922

Subject: CESAC - Guadalupe River Flood Control Project, Lower Reaches (Downtown Project)

Dear Ms. Bicknese:

We have completed our review of the Draft General Re-Evaluation Report/Environmental Impact Report and Supplemental Environmental Impact Statement for Proposed Modification to the Guadalupe River Project, Downtown San Jose, California. Our specific comments (identified by chapter-page number/paragraph number) are as follows:

Volume I

S-3/2: should read "...remnant steelhead trout *and salmon*..." USFWS-1

S-4/2: should read "...plans that were evaluated *in the current study*..." USFWS-2

S-19/postproject temperature: the "LS" should probably read "S" for significant. USFWS-3

S-22/shaded stream surface: should read "...85% of bank *length*..." USFWS-4

1-15/last paragraph: Please check the remark that USFWS conducted endangered species surveys; these may have been done by another party. Also indicate which species. USFWS-5

1-27/5: should read "...evaluation species *models* and one cover type *model*..." USFWS-6

replace "...species represented by the evaluation species...." with "steelhead and salmon" USFWS-7

1-28/1: first line should read "...cover type *and belted kingfisher*..." USFWS-8

2-15/1 (after bullets): should read "...near I-280..." USFWS-9

3-28: The figure appears to be inaccurate; it does not show the deletion of the path element on the right (east) bank downstream of Woz Way, or the pedestrian bridge across the river in the vicinity of the library. USFWS-10

4-39/4: Delete the last two sentences, as the reference to extirpation of the red-legged frog below dams clearly does not apply to this watershed, and is refuted by discussion of post-dam confirmed records of this species later in the document. USFWS-11

5-1/1: The entire first paragraph appears to be out of place and should be deleted. USFWS-12

5-15/6: Either reference the data showing the position of natural armoring near the invert elevation, or delete the conjecture that such natural armoring causes overestimate bias in the erosion results. USFWS-13

5-16/4: To our knowledge, the upstream end of segment 2 is not a pool; perhaps it is meant the "upstream portion" of this segment, or a segment below the bypass outlets. Please verify the location of the pool in question. USFWS-14

5-17/1: Here, and in numerous other locations throughout the document, there is reference made to lack of effect on "long-term channel-forming processes", for which the context of those processes is flows less than 1,500 cfs. These are not likely to be the flows which form channels; they are likely to form from much larger flows, flows which are diverted into the bypasses. Perhaps what is being confused here is the lack of effect of the project on channel maintenance processes; i.e., those flows which remove fines from gravels. Or, perhaps what is meant is that the bankful stage flow is not being diverted. Either of these flows may be less than 1,500 cfs. Or, the Corps has reason to contend that flows 1,500 cfs or less form channels in this system. Explanation and definition at first mention is needed, and perhaps some other term besides "channel-forming". Finally, channel-forming processes are not always environmentally desireable when they cause excessive incision. USFWS-15

5-29/2: The determination should say that the effect is significant but mitigated to less than significance, as the temperature increases in certain sections (as explained in volume 2) are permanent, not temporary. USFWS-16

5-37/4: Should read "210 lf". USFWS-17

5-66/2: Again, the determination should refer to the fact that SRA instream and vegetative shade element impacts are being mitigated. USFWS-18

6-27/2: Please state the background level of mercury so that the offsite disposal threshold can be better understood. USFWS-19

6-32/5: The text and following table account only large civil works projects, however, as noted there are other smaller projects not listed. Please provide a best estimate of the total impact of these projects (i.e., bank hardening not associated with those listed in Table 6.2-2). USFWS-20

6-47/4: Omit "...that can....". USFWS-21

6-49/4: Please respond as to why you selected one standard deviation above the median. A median is a non-parametric statistic and a standard deviation is a parametric statistic. Medians do not have standard deviations. USFWS-22

Volume II

1C-2/4: Regarding "...slight increase in temperature in April due to the...project...", make clear that this applies to the post-mitigation condition for comparison, not the post-project, condition. USFWS-23

1C-9/1: In the last sentence, replace "other months" with "June". USFWS-24

1C-11/2: Sixth sentence should read "....the *upper* suboptimal range...". USFWS-25

1-3 (mitigation and monitoring plan)/1: Third sentence should read "Development of this final MMP..." USFWS-26

2-11/3: The third sentence pertaining to evaluating the weir as a permanent structure may be in error. The structure was built under a 404 permit condition as a temporary structure; please review the permit and modify or quote the permit language verbatim. USFWS-27

2-18/4: The last sentence erroneously implies that mitigation for contract 3c, phase 1, has been completed because of Reach A mitigation already done. This is not so. The mitigation for this phase has never been separated in this fashion from the overall impacts of contracts 1,2, 3a, and 3b because the thermal impacts are cumulative and not additive. The mitigation already done for Reach A was of a limited, test variety, which was not intended to mitigate impacts of a particular phase. Please delete this sentence. USFWS-28

2-19/4 (and other similar sentences throughout document, e.g., 2-36/2): It is not necessary to define thalweg as it is included in the glossary of Volume I. USFWS-29

2-29/6: Replace "sheer" with "shear". USFWS-30

2-32/2: We do not recall this particular version of the planting scheme or determination of the restricted zone, although it may have resulted from additional hydraulic analysis not included in this document. The concepts accompanying the initial hydraulic re-analysis in 1997 assumed excluding vegetation from the first 600 feet downstream of I-880, with the remainder having a trees and a restricted understory. This plan has a 300 feet exclusion zone, a 3,346 foot restricted zone with no understory, and a 4,502 foot unrestricted zone. Although it is not necessary to explain the rationale for these decisions in this document, a citation to the document which does explain them should be referenced. USFWS-31

2-34/4: Please summarize the "other structures" so as not to infer that temporary shade is a necessary first option. USFWS-32

2-39/Figure 2-9: Please revise the last timeline for Guadalupe Creek. USFWS-33

33-2/1: Add a bullet symbol. USFWS-34

Table 4-2/duration of monitoring: A number of the variables are a consequence of vegetation development and/or streambed adjustment during rare events (instream cover, channel bottom stability, spawning gravel abundance, rearing habitat diversity), unlikely to be measured after the 10 year duration. USFWS-35

4-17/1: The reference to carrying capacity should be deleted because it is not relevant to survival criteria, which apply to the first 3 years only. USFWS-36

4-31/1: Add wording "...cages *or stakes*...". USFWS-37

4-31/5: Add wording "The *calculated thermal and cover* benefits...". USFWS-38

4-32/4: Delete phrase "...however, planting might be phased in response to availability of seed material for collection and propagation, and could occur over multiple years". Although we understand that such an event might occur, it is neither planned nor desireable. Rather, our agency has encouraged that efforts be made, such as through identifying primary and alternative seed source areas, that would minimize such delays. The context of including failure and/or delay in the mitigation and monitoring plan implies a level of acceptability on the part of the resource agencies which has not been negotiated. USFWS-39

4-38/3: Should begin: "At Target Year 40, trees and shrubs must shade at least 41%,..." USFWS-40

4-45/3: Replace reference "U.S. Army Corps of Engineers, 2000c" with section 4.4.3.2 of this document. USFWS-41

4-57/2: Delete the second sentence ("Temporary shade is a potential action..."). Rephrase third sentence to read "...would be implemented if required by the NMFS to meet conditions of its biological opinion...", and move the portion of the paragraph from the beginning of this sentence to the end of the paragraph, to follow the third paragraph. After excluding the initial word "Other", the existing third paragraph should then be included as part of the second paragraph, to read: "...Adaptive Management Team will determine the appropriate remedial action. Potential remedial actions that may be considered...include...". USFWS-42

If you have any questions on these comments, please contact Steve Schoenberg of my staff at (916) 414-6564.

Sincerely,

Dale A. Pierce
Acting Field Supervisor

Enclosure

cc: ARD, Portland, OR

CDFG, Director, Sacramento, CA
NMFS, Santa Rosa, CA (Attn: Mark Helsby)
RWQCB, Oakland, CA
SWRCB, Sacramento, CA

U.S. DEPARTMENT OF THE INTERIOR, FISH AND WILDLIFE SERVICE, DALE A PIERCE (AUGUST 29, 2000)

Response to Comment USFWS-1

The following change is made to the Draft EIR/SEIS:

Page S-2. The second bullet is modified as follows:

S.1.4 Primary Objectives

The following design, construction, and environmental objectives were developed by the Corps, SCVWD, and others through an iterative process and then used to develop alternative plans for project modifications.

- Reduce flood damage from the Guadalupe River in downtown San Jose by conveying flows up to 17,000 cubic feet per second (cfs) through the project area consistent with the Authorized Project.
- Avoid potential adverse impacts on fish and wildlife habitat, with special emphasis on ~~the~~ remnant steelhead trout and chinook salmon using the opportunities associated with construction of the flood protection components.

Response to Comment USFWS-2

The Draft EIR/SEIS evaluates the No-Action Alternative, the Bypass System Alternative, the Refined Bypass System Alternative, and the Extended Bypass Alternative. As discussed in Chapter 2, other alternatives were considered but eliminated from detailed evaluation in the Draft EIR/SEIS.

The following change is made to the Draft EIR/SEIS:

Page S-4. Section S.2.1, "Preliminary Analysis and Comparison of Alternative Modification Plans," is modified as follows:

S.2.1 Preliminary Analysis and Comparison of Alternative Modification Plans

The Authorized Project was evaluated in the 1985 EIS (U.S. Army Corps of Engineers, 1985). Numerous alternative modification plans have been considered as part of the GRR process to meet the objective of providing 100-year flood protection for downtown San Jose. The alternative plans that ~~were evaluated~~ have been considered since the Authorized Project was evaluated include:

- No Action
- A revised channel-widening plan

- An upstream detention plan
- The authorized project with additional mitigation
- Six preliminary bypass designs
- Eight variations of the preferred bypass design

Response to Comment USFWS-3

The conclusion that the project would result in a less-than-significant effect on fish, due to postproject water temperatures, has not been changed (Section 5.6.4.3, "Resident and Anadromous Fish Rearing").

Response to Comment USFWS-4

The following change is made to the Draft EIR/SEIS:

Page S-22. The second to last item in the "Indicators and Measurable Objectives" column of Table S.6-3 is modified as follows:

> Shaded stream surface: 45 percent of the total stream surface area is shaded at normal summer flow, at least 85 percent of the planted bank length has some shade ...

Response to Comment USFWS-5

The following change is made to the Draft EIR/SEIS:

Page 1-15. The last paragraph is modified as follows:

> USFWS prepared an FWCA report on the Guadalupe River Project in 1984. Between 1989 and 1994, USFWS provided the Corps with planning aid letters and with lists of endangered and threatened species and updates to these lists. ~~In 1993, USFWS conducted endangered species surveys in the project area.~~ USFWS has also participated in advisory groups, has been responsible for conducting a Habitat Evaluation Procedures (HEP) analysis for the project, and has helped to develop an MMP for the project. USFWS has indicated to the ...

Response to Comment USFWS-6 and USFWS-7

The following change is made to the Draft EIR/SEIS:

Page 1-27. The last paragraph is modified as follows:

> To quantify effects on SRA cover vegetation quality that would result from the Guadalupe River Project with ~~Proposed Action~~ Bypass System Alternative, the Guadalupe River Project HEP technical team evaluated anticipated project effects on aquatic and terrestrial species that use SRA cover vegetation along the Guadalupe River and anticipated project effects on the habitat needs of these species. To represent the suite of species that use SRA cover vegetation along the Guadalupe River as well as their habitat needs, two evaluation species models and one cover type model were selected by USFWS and approved by the Guadalupe River Project HEP technical team. Rainbow trout and belted kingfisher were selected as the evaluation species, and nonsalmonid pool habitat was selected as the cover type. The results of the HEP analysis indicate that full compensation of anticipated project effects on ~~species represented by the evaluation species~~ steelhead, salmon, and belted kingfisher is achieved by a proposed mitigation package that includes onsite mitigation and offsite mitigation on Reach A and the Guadalupe River. However, full compensation of anticipated project effects on habitat values represented by the ...

Response to Comment USFWS-8

The recommended change is not made because the HEP analysis balanced for steelhead and belted kingfisher when onsite, Reach A, and Guadalupe Creek mitigation sites were evaluated. See Responses to Comments USFWS-6 and USFWS-7.

Response to Comment USFWS-9

The following change is made to the Draft EIR/SEIS:

Page 2-15. The first paragraph is modified as follows:

> Segment 3A is between Coleman Avenue and New Julian Street. Segment 3B extends from New Julian Street to Park Avenue. Segment 3C Phase 3 is at the upstream end of the project, near ~~I-880~~I-280. The Bypass System Alternative would include construction of flood protection in Segments 3A and 3B from ~~2001~~ 2002 through ~~2002~~ 2004. In Segment 3C Phase 3 during, flood protection construction would occur in ~~2003-2004~~2003 and 2004. Installation of riparian vegetation mitigation plantings began in 1994 and was completed in 1999. Installation of SRA cover vegetation mitigation plantings in these segments began in 1999 and would continue through ~~2002~~ 2004. Installation of

anadromous fish habitat mitigation began in 1994 and would continue through ~~2002~~2004 (U.S. Army Corps of Engineers, 1992).

Response to Comment USFWS-10

Figure 3.4-9, "Existing and Proposed Recreation Components," has been updated to indicate the location of the pedestrian bridge across the Guadalupe River near the public library.

Response to Comment USFWS-11

The following change is made to the Draft EIR/SEIS:

Page 4-39. The last paragraph is modified as follows:

Endangerment. In the late 1800s and early 1900s, the red-legged frog was heavily marketed as a source of frog legs for human consumption. Consequently, breeding in the early 1900s was reduced to the point that red-legged frog populations became too minimal to record. Introduction of the bullfrog (*Rana catesbeiana*) to California as an additional source of frog legs added to the decline of the red-legged frog population because of competition and predation from the bullfrog (Jennings and Hayes, 1985). The red-legged frog currently faces habitat loss, habitat alteration, and competition with introduced exotic predators, such as bullfrog, largemouth bass (*Micropterus salmoides*), and green sunfish (*Lepomis cyanellus*). The most secure populations of red-legged frogs are found in aquatic sites that support substantial riparian and aquatic vegetation and lack exotic predators. ~~The final rule for the Federal listing of the red-legged frog states that red-legged frogs generally are extirpated from downstream portions of a drainage from 1 to 5 years after the filling of a reservoir, depending on the size of the drainage (61 FR 25813-25833, May 23, 1996). In larger drainages, isolated populations can persist upstream.~~

Response to Comment USFWS-12

The following change is made to the Draft EIR/SEIS:

The first paragraph of Section 5.1 was inserted incorrectly into the document. The text correctly appears in Section 5.8.3.4, "Visual/Aesthetic Resources."

Response to Comment USFWS-13

A reference has been included as well as additional information based on HEC-6 modeling.

Response to Comment USFWS-14

The discussion of creating additional scour pools or expanding exiting pools on page 5-16 of the Draft EIR/SEIS refers to the pools in the upstream end of Segment 2 nearest the outlet structures, not to a specific pool in Segment 2. The upstream end of segment 2 is armored to prevent erosion; pools exist downstream from the armored section.

Response to Comment USFWS-15

The term "channel-forming flows" and derivatives has been changed throughout the Draft EIR/SEIS to "channel-maintenance flows" and the term has been added to the Glossary.

Response to Comment USFWS-16

The text of the Draft EIR/SEIS has been clarified to indicate that immediately after the completion of construction activities increases in postproject water temperature are significant because the water temperature increases in some stream sections are expected to be higher than the Basin Plan temperature objective of 5 °F. This is not a change in the analysis in the Draft EIR/SEIS, but a clarification of the conclusion of the analysis in relation to the numerical water quality objective for temperature in the San Francisco Bay Basin Plan (Section 4.3.3, "Temperature"). Increases greater than 5 °F are not permanent (Section 5.3.3.4, "Water Temperature"). Postmitigation impacts are less than significant.

The following change is made to the Draft EIR/SEIS:

Page 5-29. Section 5.3.3.4, "Water Temperature." The first determination statement is modified as follows:

> ***Determination:*** Increases in postproject water temperature would be a ~~less-than-~~significant adverse effect because changes in postproject temperatures in some stream sections may be higher than the Basin Plan temperature objective of 2.8 °C (5 °F) immediately after completion of construction activities. The effects, however, would be temporary. Onsite and offsite SRA cover vegetation that will be planted as part of the MMP will compensate for the temporary postproject temperature increases. Postmitigation impacts are less than significant.

A more detailed description of the methods used to determine this finding of significance is also added to the Draft EIR/SEIS.

The following change is made to the Draft EIR/SEIS:

Page 5-22. Section 5.3.3.4, "Water Quality – Water Temperature." The first complete paragraph is modified as follows:

> Water temperatures were simulated for two types of years to analyze project effects: a wet year and a dry/median year. These two types of years were chosen to represent the range of flow conditions that may occur in the Guadalupe River. Streamflow data from 1995 were used to simulate the wet year. A composite historic data set was used to simulate the dry/median year based on consultation with SCVWD and the Corps.
>
> The significance of potential changes in water temperature was evaluated using the 2.8 °C (5 °F) threshold of the San Francisco Bay Basin Plan (Section 4.3.3, "Water Quality – Temperature"). The Basin Plan does not provide clear guidance on procedures for applying the 2.8 °C (5 °F) threshold. In this evaluation, the threshold was applied to average maximum water temperatures (which are expected to increase more than average temperatures) in the Guadalupe Creek mitigation site, Segment 3, Segments 1 and 2, and the Reach A mitigation site (Appendix 1B, Section 1B.5 "Temperature Simulations").
>
> Measured water temperature data were not used in the assessment of effects because only intermittent water temperature data are available for the period prior to...

Response to Comment USFWS-17

The following change is made to the Draft EIR/SEIS:

Page 5-37. Section 5.4.3.2, "Shaded Riverine Aquatic Cover Vegetation," is modified as follows:

> SRA cover vegetation will be planted on unvegetated banks and within gaps in the existing riparian canopy. The purpose of these plantings is to maximize SRA cover vegetation in the downtown reach, the Reach A mitigation site, and the Guadalupe Creek mitigation site. In 1998, approximately 200 lf of riparian vegetation was planted in the Woz Way to Park Avenue bypass reach. In 2000, an additional 210 lf of riparian vegetation will be planted in the Woz Way to Park Avenue bypass reach. Also in 2000, approximately ~~1,656~~ 282 lf of riparian vegetation will be planted in Segments 1 and 2. In 2001, approximately 1,376 lf of riparian vegetation will be planted in Segments 1 and 2. In 2002, approximately ~~934~~ 878 lf of riparian vegetation will be planted in Segment 3A ~~and 3B~~.

Response to Comment USFWS-18

As indicated, the impact would be less than significant because environmental commitments will be implemented as the project elements are constructed, including installing instream SRA cover vegetation, planting SRA cover vegetation, and implementing a vegetation protection plan. In addition, the recent improvements in fish passage, discussed in Section 5.6.4.1, "River Morphology Effects," will increase the amount of suitable habitat available to fish in the upper Guadalupe River watershed areas. These areas are accessible to adult steelhead and chinook salmon.

The following change is made to the Draft EIR/SEIS:

Page 5-66. The first full paragraph is modified as follows:

> *Determination:* The ~~Proposed Action~~ Bypass System Alternative would have less-than-significant SRA cover effects on resident and anadromous fish rearing because instream SRA cover would be installed, SRA cover vegetation planted, and a vegetation protection plan implemented. All environmental commitments have been incorporated into the ~~Proposed Action~~ Bypass System Alternative.

Response to Comment USFWS-19

See Response to Comment EPA-10.

Response to Comment USFWS-20

The total impact of all projects along the Guadalupe River is estimated on page 6-34 of the Draft EIR/SEIS. A total of approximately 4.0 bank miles have been modified, primarily in the last 60 years, through the installation of gabions, concrete lining, and riprap and by widening and dredging. An additional 11.1 bank miles of the Guadalupe River are now bare or have been converted to ruderal vegetation or upland landscaping. The impacts of these past activities are reflected in the description of the affected environment provided in Section 4.4, "Biological Resources – Vegetation."

Response to Comment USFWS-21

The following change is made to the Draft EIR/SEIS:

Page 6-47. The second full paragraph is modified as follows:

> If a cumulative impact on the western snowy plover or its habitat, as a result of changes in hydrologic or hydraulic conditions, is identified in the BA for the Lower Guadalupe River Project, USFWS has requested that the analysis

determine for the decision makers what portion of this cumulative impact, if any, is caused by the Guadalupe River Project with ~~Proposed Action~~ Bypass System Alternative. If no portion of this cumulative impact is shown to be the result of the Guadalupe River Project with ~~Proposed Action~~ Bypass System Alternative, mitigation for this impact would be the responsibility of the Lower Guadalupe River Project. If some portion of an unexpected cumulative impact is shown to be a result of the Guadalupe River Project with ~~Proposed Action~~ Bypass System Alternative, the Corps, Sacramento District, will reinitiate consultation with USFWS on the Guadalupe River Project. In such a case, Corps policy and regulations exist that allow for additional mitigation to compensate for impacts proven to be a result of a completed project.

Response to Comment USFWS-22

The median (50 percentile) depth of inundation was selected rather than the mean because it is more representative of the normal evaporation pond operations. In a normal distribution the mean and the median are the same. However, an extensive flood may skew the data making the mean larger than the median and generally outside the normal operating range. What is proposed, is to calculate one standard deviation about the mean and apply it to the median. This would provide a range of allowable deviation from the median depth because it is a measure of the variability of the depth that occurs.

The following change is made to the Draft EIR/SEIS:

Page 6-49. The third full paragraph is modified as follows:

> **Remedial Actions.** If the median monthly depth and duration of flooding of salt evaporation pond A8 plus or minus one standard deviation about the mean, exceed those predicted by the HEC-RAS model of Alviso Slough, the Corps and SCVWD will coordinate with USFWS to determine the cause of the change in depth and duration of flooding and whether additional steps are required to minimize impacts on western snowy plover. The Corps, in coordination with USFWS, will reinitiate consultation if changes in hydraulic conditions continue, if they affect listed species, and if they are determined to be a result of the Guadalupe River Project with ~~Proposed Action~~ Bypass System Alternative.

Response to Comment USFWS-23

The second paragraph of Section 1C.1.2, "Steelhead Egg Incubation," focuses on a comparison of preproject conditions to postproject conditions. The third paragraph of Section 1C.1.2, "Steelhead Egg Incubation," focuses on a comparison of preproject conditions to postmitigation conditions. This is now made clearer in the modified text. In addition, in the second paragraph, it should refer to March instead of April.

The following change is made to the Draft EIR/SEIS:

Page 1C-2. Appendix 1. The second paragraph of Section 1C.1.2, "Steelhead Egg Incubation," is modified as follows:

1C.1.2 Steelhead Egg Incubation

Water temperatures less than 53.6 °F provide optimal conditions for steelhead egg incubation, which occurs from January through June. Suboptimal temperatures for steelhead egg incubation range between 53.6 °F to 60.8 °F. Temperatures greater than 60.8 °F are considered lethal. During January and February, simulated average temperatures under preproject conditions fall in the optimal or suboptimal range (Figures 1C-1 through 1C-4). By March and April, temperatures are less suitable; (simulated average temperatures occasionally exceed the lethal threshold of 60.8 °F.). Simulated temperatures for preproject conditions during May and June are usually lethal to steelhead eggs.

The Guadalupe River Project could slightly reduce the length of time in spring that steelhead eggs can incubate successfully. However, based on preproject water temperatures, successful steelhead incubation is expected to occur only in January and February. Simulated preproject average maximum water temperatures exceed the lethal thermal limit of 60.8 °F during March ~~April~~ of the dry/median year in Segments 1, 2, and 3 (Figures 1C-1 and 1C-2). Therefore, the slight increase in postproject temperature in March ~~April~~ due to the Guadalupe River Project should minimally affect the population. Furthermore, incubation occurs in the gravel, where midday water temperatures tend to remain cooler. Steelhead eggs incubating in March ~~April~~ are likely to have passed into the larval or juvenile stage; these stages are more tolerant of temperatures greater than 60.8 °F.

Thermal suitability units indicate that postmitigation temperature conditions for incubating steelhead will be similar to preproject conditions (Figure 1C-6). Maturation of SRA cover vegetation will increase shade and improve water temperature conditions in lower Guadalupe Creek. Simulated average temperatures in lower Guadalupe Creek drop below the 60.8 °F lethal threshold during April and May of the dry/median year and during June of the wet year (Figure 1C-4).

Response to Comment USFWS-24

The text is modified to be more specific about what months temperatures in Reach A are expected to exceed 77 °F.

The following change is made to the Draft EIR/SEIS:

Page 1C-2 and 1C-9. Appendix 1. The first paragraph of Section 1C.1.3, "Juvenile Steelhead Rearing," is modified as follows:

1C.1.3 Juvenile Steelhead Rearing

Juvenile steelhead may be present in the Guadalupe River all year. Water temperatures below 64.4 °F provide optimal conditions for juvenile-steelhead rearing. Suboptimal temperatures for juvenile steelhead range between 64.4 °F and 77.0 °F. Temperatures above 77 °F are considered lethal. June through September is the most critical period for these fish. Simulated summer temperatures for preproject conditions exceed the 64.4 °F upper limit of optimal conditions (Figures 1C-1 through 1C-4). However, simulated average maximum preproject temperatures in Segments 1, 2, and 3, however, are below the 77.0 °F lethal threshold. Simulated average maximum preproject temperatures in Reach A exceed 77.0 °F during the summer of the dry/median year. Simulated average maximum preproject temperatures in lower Guadalupe Creek exceed 77.0 °F during the summer of both dry/median and wet years. The Guadalupe River Project would cause water temperatures to exceed the optimal threshold (64.4 °F) for juvenile steelhead during spring and fall (Figures 1C-1 through 1C-4). Exceeding the threshold is expected to minimally affect juvenile survival because juvenile steelhead endure temperatures much warmer than 64.4 °F during summer months. The Guadalupe River Project also causes the simulated average maximum temperature to exceed the lethal threshold (77 °F) in July of wet years in Reach A. Because temperatures in Reach A are expected to exceed 77 °F under preproject conditions during ~~other months~~ June, July, and August of dry years, the temperature increase in July of wet years would have little additional effect on the survival of juvenile steelhead.

Response to Comment USFWS-25

The following change is made to the Draft EIR/SEIS:

Page 1C-11. Appendix 1. The first paragraph of Section 1C.1.5, "Prespawning Adult Chinook Salmon," is modified as follows:

1C.1.5 Prespawning Adult Chinook Salmon

Optimal conditions for adult chinook salmon occur at water temperatures below 53.6 °F. Suboptimal temperatures for adult chinook salmon range between 53.6 °F and 75.2 °F. Water temperatures above 75.2 °F are considered unsuitable. Chinook salmon may be present from July through February, although their peak occurrence is from October to December. Under preproject conditions, simulated average-maximum water temperature exceeds the optimal temperature of 53.6 °F during most months (Figures 1C-1 through 1C-4). Temperatures within the upper suboptimal range for adult chinook salmon are lethal for incubating eggs, which require temperatures below 60.8 °F. Consequently, adult chinook salmon would be unable to spawn successfully until after October. Spawning under preproject and

postproject conditions would be successful later in fall when water temperature is cooler and less affected by the Guadalupe River Project.

Response to Comment USFWS-26

The existing text is correct. The MMP is not "final," as there may be modifications to the MMP as a result of review of monitoring data by the Adaptive Management Team.

Response to Comment USFWS-27

The existing text is correct. It states that the rock weir was originally installed as a temporary structure. However, regardless of present permit requirements, SCVWD plans to evaluate whether it would be advantageous to retain the weir as a permanent structure after completion of the Guadalupe River Project. SCVWD will coordinate with appropriate resource and regulatory agencies prior to making any decision about making the weir permanent and will obtain necessary permits.

Response to Comment USFWS-28

The following change is made to the Draft EIR/SEIS:

Page 2-18. Appendix 3. Section 2.2.4.1, "Segment 3C Phase 1," is modified as follows:

> **2.2.4.1 Segment 3C Phase 1**
>
> Segment 3C Phase 1 work is on the east bank between Woz Way and the I-280/State Route 87 interchange (Figure 2-1). Approximately 355 feet of the east bank was armored with gabions and stone terraces from under the Woz Way Bridge to 50 feet downstream from the I-280 south/State Route 87 connector ramp (Table 2-2). A stairway was constructed on the east bank upstream from the Woz Way Bridge to allow access to the lower trail system. Segment 3C Phase 1 construction began in mid-September 1999 and ended in ~~January~~late 2000. Work within CDFG's jurisdictional waters was completed by November 1, 1999. ~~Mitigation for this component has been completed; it included SRA cover mitigation in Reach A.~~

Response to Comment USFWS-29

Because the MMP will become a stand-alone document, the definition of "thalweg" on page 2-19 remains in the text. The other occurrence of the definition, on page 2-36, is deleted.

The following change is made to the Draft EIR/SEIS:

Page 2-36. Appendix 3. The first complete paragraph is modified as follows:

> The approximate dimensions of the modified trapezoid/boulder low-flow channel include a top width of 15 feet, a bottom width of 4 feet, a depth of 2 feet 2 inches, 1H:1V (horizontal to vertical) side slopes up to 1 foot 1 inch depth, and 4H:1V side slopes above 1 foot 1 inch depth (Figure 2-6) (A-N West, et al., 2000). This design will generally provide 0.9 to 1.1 feet (10.8 inches to 13.2 inches) of thalweg depth at 4 cfs except in the vicinity of the boulder clusters where thalweg water depth will drop to 0.8 to 0.9 foot (9.6 inches to 10.8 inches) as the water flows around the clusters (A-N West, et al., 2000). Thalweg water depth will then rise back up to a depth 0.9 to 1.1 feet after clearing the clusters. ~~Thalweg is the line of maximum depth in the channel (Leopold and Wolman, 1957)~~.

Response to Comment USFWS-30

The following change is made to the Draft EIR/SEIS:

Page 2-29. Appendix 3. The first sentence of the fifth complete paragraph is modified as follows:

> In response to concerns regarding feasibility and sustainability of planting in Reach A due to high average floodflow velocities and shear stresses, five pilot planting sites were installed during winter 1998-1999. Each pilot-planting site was approximately 300 by 15 feet, for a total of 1,543 lf of riparian vegetation. Two pilot planting sites were located in the …

Response to Comment USFWS-31

The planting exclusion zone described for the Reach A mitigation site is the original version, but original discussions may have been focused on distances in linear feet that include both sides of the river. As indicated on page 2-29, fourth complete paragraph, the exclusion zone is 300 feet downstream from I-880, which results in a total of 600 lf excluded from planting. The restricted planting area is approximately 1,673 lf on each side of the river and totals approximately 3,346 lf of mitigation. The unrestricted planting area starts approximately 2,000 feet downstream from I-880 and extends to Airport Parkway; it includes approximately 4,502 lf of mitigation.

Response to Comment USFWS-32

Temporary shade will be the first remedial measure implemented if water temperatures are determined harmful to steelhead and chinook salmon. As described in Chapter 4 (Section 4.4.3.2, "Monthly Thermal Suitability Indicator for Anadromous Fish").

Other remedial actions will be taken if temporary shade is unable to reduce temperatures as needed. There is no need to modify the existing text.

Response to Comment USFWS-33

Figure 2-9, "Guadalupe River Project – Schedule for Flood Protection and Recreation Construction and Mitigation Installation," is revised to reflect the latest schedule for the Guadalupe Creek Restoration Project.

Response to Comment USFWS-34

The following change is made to the Draft EIR/SEIS:

Page 3-2. Appendix 3. A bullet symbol is added to the first 'paragraph' as follows:

- Design the Project so that it will not cause elevated water temperatures or other project effects that harm anadromous fish species or disturb other beneficial uses during project construction and over the entire life of the Project (100 years), including the transition period before replacement vegetation matures. "Harm" is defined as:

  > "an act that actually kills or injures wildlife. Such an act may include significant habitat modification or degradation, where actually kills or injures wildlife by significantly impairing essential behavior patterns including breeding, feeding, or sheltering [50 CFR 17.3.]"

Response to Comment USFWS-35

Some variables are unlikely to be measured after the 10-year duration of monitoring specified in Table 4-2. The need for monitoring of each indicator will be reassessed by the Adaptive Management Team throughout the life of the project.

Response to Comment USFWS-36

The following change is made to the Draft EIR/SEIS:

Pages 4-16 and 4-17. Appendix 3. The last paragraph on page 4-16, which continues onto page 4-17, is modified as follows:

> **Measurable Objective.** A minimum of 100 planted trees and 70 planted shrubs per acre must survive for 3 years after planting in the mitigation area. A percentage of the initial planting density was not chosen for the survival

> objective because planting density will vary by location, with as many as 400 trees and 200 shrubs planted per acre in some locations. A variable planting density allows for the survival of individuals and species best suited for each location. Based upon evaluation of monitoring results for other indicators, the ~~Adaptive Management Team~~ AMT may lower the measurable objective for trees and shrubs~~ consistent with the carrying capacity of the riparian mitigation areas~~.

Response to Comment USFWS-37

The following change is made to the Draft EIR/SEIS:

Pages 4-30 and 4-31. Appendix 3. The last paragraph on page 4-30, which continues onto page 4-31, is modified as follows:

> Future mitigation in the restricted planting area would include planting riparian vegetation on different types of soil and using different degrees and types of slope surfaces in approximately 2,746 lf of Reach A. Because of hydraulic constraints, planting would be limited to one plant every 5 to 6 feet along the bank. Plants would be distributed in a fragmented, nonlinear pattern in the 15-foot-wide planting zone. The plant material would be installed in augured or hand-excavated holes and might include container plants and/or cuttings. Planting holes should be backfilled with native material. Species planted in this area should be limited to those species that will be a single trunk tree at maturity. Examples of single-trunk trees include Fremont's cottonwood, western sycamore, white alder, red willow, and yellow willow. Shrub or shrub-like species like arroyo willow, sandbar willow, box elder, and mulefat should not be planted. Plant protection cages and small stakes are not recommended due to the likelihood of high-velocity flows and prolonged inundation during winter storms. The contractor should consider installing woven erosion control mats around individual planting locations, or the entire site, to reduce erosion potential.

Response to Comment USFWS-38

The following change is made to the Draft EIR/SEIS:

Page 4-31. Appendix 3. The last paragraph on page 4-31 is modified as follows:

> For the Project to receive the full HEP credits assumed in the HEP analysis (U.S. Army Corps of Engineers, 2000b), the entire 12,044 lf (about 4.2 acres) of riparian vegetation must be installed along Guadalupe Creek (Appendix D). The calculated thermal and cover benefits of planted vegetation to SRA cover value will accrue only after habitat functions are provided, including overhead and instream cover. At most, only about 7,178 lf of riparian

vegetation will be directly counted as mitigation for the Project. The remaining 4,866 lf of riparian vegetation along Guadalupe Creek may be available to mitigate impacts for other anticipated SCVWD actions, after a mitigation banking agreement and protocols have been developed between SCVWD, USFWS, and CDFG.

Response to Comment USFWS-39

The text tying the timing of planting to the availability of seed material was for informational purposes and was certainly not intended to encourage delay. The text is deleted from the draft EIR/SEIS with the understanding that delay may occur.

The following change is made to the Draft EIR/SEIS:

Page 4-32. Appendix 3. The third complete paragraph is modified as follows:

> Phase 2 extends from Almaden Expressway upstream to the Phase 1 planting site and would include planting 10,781 lf of riparian vegetation along both sides of the creek. Phase 2 is scheduled for implementation in fall 2000~~;~~ ~~however, planting might be phased in response to the availability of seed material for collection and propagation, and could occur over multiple years~~. Design objectives for the mitigation plan include streamside vegetation planting, instream fish-habitat construction, and biotechnical bank stabilization. Site preparation and grading activities may include bank grading to create low benches and reducing the slope of vertical banks. Existing ruderal vegetation and Himalaya blackberry may be removed. Planting surfaces are expected to consist of low benches with probable availability of year-round soil moisture and higher benches where species preferring drier conditions will be planted.

Response to Comment USFWS-40

The following change is made to the Draft EIR/SEIS:

Page 4-38. Appendix 3. The second complete paragraph is modified as follows:

> **Measurable Objective.** By year 40, trees and shrubs must shade at least 41 percent, 64 percent, 45 percent, 58 percent, and 45 percent of the total stream surface in Segment 1, Segment 2, Segment 3, Guadalupe Creek, and Reach A, respectively. The total stream surface area is calculated for normal summer flow conditions during the hours from 10 a.m. to 2 p.m. At least 85 percent of the streambank must be shaded. The shaded area objective is consistent with the expected growth of riparian vegetation by year 40 and the overhead cover needs of steelhead (Jones & Stokes Associates, 1997, U.S. Army Corps of Engineers, 1999; Raleigh et al., 1984). The percentage of total stream surface

area shaded must increase toward the measurable objective by year 9, and the measurable objective must be achieved by year 40.

Response to Comment USFWS-41

The following change is made to the Draft EIR/SEIS:

Page 4-45. Appendix 3. The third complete paragraph is modified as follows:

> The effects of water temperature changes on steelhead and chinook salmon throughout the Project area were determined by calculating monthly thermal suitability units for each JSATEMP model segment (Section 4.4.3.2, "Monthly Thermal Suitability Indicator for Anadromous Fish Habitat") ~~U.S. Army Corps of Engineers, 2000e~~). Thermal suitability units were summed for all JSATEMP model segments affected by the Project, including mitigation areas. Thermal suitability units are the product of stream area times a suitability index for a steelhead or chinook salmon life stage. A suitability index is assigned to simulated hourly water temperature based on optimal, sub-optimal, and lethal effects on each species and life stage (Table 4-7). A suitability index (SI) is a unitless number bounded by 0 and 1 (Fris and DeHaven, 1993, U.S. Fish and Wildlife Service, 1982). For water temperature, 0 indicates that the life stage would not survive and 1 indicates optimal temperature conditions.

Response to Comment USFWS-42

The following change is made to the Draft EIR/SEIS:

Page 4-57. Appendix 3. The second and third complete paragraphs have been modified as follows:

> **Remedial Actions.** If the monthly letter report to the ~~Adaptive Management Team~~ATM indicates that the measurable objective for the short-term suitability indicator for anadromous fish habitat was not met, the ~~Adaptive Management Team~~ATM will determine the appropriate remedial action. ~~Temporary shade is a potential remedial action to moderate short-term water temperature effects on steelhead and chinook salmon prior to the growth and anticipated shading provided by mitigation SRA cover vegetation. A temporary shade remedial action would be implemented in cooperation NMFS and the Adaptive Management Team to meet the conditions in NMFS' biological opinion for Project effects on steelhead. Temporary shade may be implemented in the armored low-flow channel sections of Segments 2, 3A, and 3B, excluding locations where the armored low-flow channel is covered by bridges. Temporary shade will not be installed in Segment 3C because much of it is covered by bridges. The preferred option for providing~~

~~temporary shade is to place boxed trees adjacent to the armored low-flow channel. These trees would be removed in the fall and replaced in the spring. Another option would include suspension of shade cloth across the armored low-flow channel sections in Segments 2, 3A, and 3B. Installation and operation of temporary shade will be monitored to verify the temperature benefits of the shade measure(s) used. Other~~ Potential remedial actions that may be considered by the ~~Adaptive Management Team~~ATM include increasing the density of plantings of SRA cover vegetation in the Project area with large, fast-growing tree stock; increasing the water depth by adjusting the invert stabilization structures and low-flow channel check-structures in Segments in 3A and 3B; flow augmentation with cool water; and planting additional offsite mitigation areas. These remedial actions are not part of the Project mitigation measures. If the ~~Adaptive Management Team~~ATM selects any of these remedial actions, environmental analysis, documentation, review, and required permits will need to be obtained at the direction of the ~~Adaptive Management Team~~ATM before the actions are implemented. With respect to flow augmentation, the feasibility of this remedial action would be constrained by water management operations described in Chapter 1 (Section 1.4, "Limitation on Mitigation Program").

A temporary shade remedial action would be implemented if ~~cooperation with the~~ required by NMFS to meet the conditions in the NMFS Biological Opinion for effects on steelhead. Temporary shade may be implemented in the armored low-flow channel sections of Segments 2, 3A, and 3B, excluding locations where the armored low-flow channel is covered by bridges. Temporary shade will not be installed in Segment 3C because much of it is covered by bridges. The preferred option for providing temporary shade is to place boxed trees adjacent to the armored low-flow channel. These trees would be removed in the fall and replaced in the spring. Another option would include suspension of shade cloth across the armored low-flow channel sections in Segments 2, 3A, and 3B. Installation and operation of temporary shade will be monitored to verify the temperature benefits of the shade measure(s) used.

CHAPTER 3

State and Local Agencies

County of Santa Clara
Environmental Resources Agency
Parks and Recreation Department
298 Garden Hill Drive
Los Gatos, California 95032-7669
(408) 358-3741 FAX 358-3245
Reservations (408) 358-3751 TDD (408) 356-7146
www.parkhere.org

August 9, 2000

Ms. Nina Bicknese
Biological Sciences Environmental Manager
U.S. Army Corps of Engineers
1325 J Street
Sacramento, CA 95814-2922

RE: **Comments on Draft General Re-Evaluation Report/Environmental Impact Report and Supplemental Environmental Impact Statement (draft report) for Proposed Modifications to the Guadalupe River Project – Downtown San Jose, California**

Thank you for the opportunity to comment on the subject Draft General Re-Evaluation Report/EIR and Supplemental EIS documents for the Guadalupe River Project in Downtown San Jose. Our comments, which follow, are focused on the potential impacts and/or association with parks and trails of the proposed modifications of the Guadalupe River Project within the proposed project area.

As shown in the City of San Jose's General Plan, the Guadalupe River Corridor, is also designated as a sub-regional trail route, "*S3 – Guadalupe Trail*," in our Countywide Trails Master Plan in the Parks and Recreation Chapter of the Santa Clara County General Plan. As a result, the Santa Clara County Parks and Recreation Department is especially encouraged to see, through the hard work of the Guadalupe River Park and Gardens Committee and San Jose Redevelopment Agency, the provision of and improvements to trails within the Guadalupe River Corridor. CSC-1
However, we would like to see the public's concerns about the visual impacts and public safety of the proposed box culvert addressed in the DEIR and Supplemental EIS. CSC-2 CSC-3

On another note, we also anticipate that, as the planning process continues for other Santa Clara Valley Water District (SCVWD) projects for the Lower Guadalupe River and Alviso Baylands area, the Draft Environmental Impact Report/Statement will address the cumulative impacts and mitigation measures to preserve public access on existing and future trails along the Guadalupe River Corridor in the Downtown Guadalupe Reach, Lower Guadalupe Reach, and Alviso Marina area. It is hoped that opportunities for future regional trail connections, such as those being recommended by the City of San Jose Bay Trail Master Plan, will be preserved throughout the entire Guadalupe River Corridor. CSC-4

In particular, the Parks Department is seriously concerned about how the potentially significant impacts of the proposed flood protection alternatives for the Guadalupe River Reach in the downtown San Jose area may impose cumulative effects on the Lower Guadalupe River Flood Protection Project. We had commented on an earlier Notice of Preparation for the Draft EIR for the latter project. In regards to the increased backwater flooding that will occur in the Alviso Marina County Park area with the proposed flood protection measures of the Lower Guadalupe River Project, the Parks Department is currently coordinating the SCVWD on refining design solutions for their proposed flood protection alternatives. We had scheduled Bay Trail development and improvements in Alviso Marina County Park, as part of our 1997 Alviso Marina County Park Master Plan, in Fall 2001. Our grant awards from the San Francisco Bay Trail and Coastal Conservancy would provide enhanced amenities for Bay Trail users and work towards completing the Bay Trail loop around the park. CSC-4

The Parks Department strongly recommends the SCVWD address the cumulative impacts of the three (3) Guadalupe River Projects currently under way. We would like to see the Alviso Marina County Park remain open and usable for the Alviso community and our park visitors. We look forward to seeing the Final EIR and Supplemental EIS.

If you would like to discuss any of our comments in greater detail, please email me at jane.mark@mail.prk.co.santa-clara.ca.us, or contact me at (408) 358-3741, extension 152.

Sincerely,

JANE MARK
Park Planner

CC: Lisa Killough, Deputy Director, Administration
Mark Frederick, Manager, Planning and Development
Khoa Vo, Associate Civil Engineer

Board of Supervisors: Donald F. Gage, Blanca Alvarado, Peter McHugh, James T. Beall Jr., S. Joseph Simitian
County Executive: Richard Wittenberg

COUNTY OF SANTA CLARA, ENVIRONMENTAL RESOURCES AGENCY, PARKS AND RECREATION DEPARTMENT, JANE MARK (AUGUST 9, 2000)

Response to Comment CSC-1

The Corps and SCVWD acknowledge the County of Santa Clara's support for the recreation component of the Guadalupe River Project.

Response to Comment CSC-2

Additional information on the visual effects, particularly of the box culverts, is added to the Draft EIR/SEIS.

The following change is made to the Draft EIR/SEIS:

Page 5-71. The third full paragraph under Section 5.8.3.4, "Visual/Aesthetic Resources," is modified as follows:

> The ~~Proposed Action~~ Bypass System Alternative will result in ~~5,492~~ 5,532 lf of bank armoring, 2,635 lf of riverbed armoring and approximately ~~17,900~~ 16,000 lf of recreation trails. The riparian corridor would become more visible and have a combination of natural vegetation and engineered products. The increase in views of the water from recreational trails is considered a positive effect on the visual character of the area. The increase in views of armored riverbank and riverbed is considered a negative effect on the visual character of the area. Incorporating improvements indicated in the Guadalupe River Park Master Plan (City of San Jose, 1989), such as additional plantings in the gabions, would help to make the armored riverbed in Segment 3B more aesthetically pleasing. The inlets to the box culverts will be integrated into the riverbank armoring and will be visible from the west side of the Guadalupe River, from the West Santa Clara Street Bridge, and from the St. John Street Bridge. The views of the inlets to the box culverts are considered a negative effect on the visual character of the area in the vicinity of the inlets. However, SCVWD, Redevelopment Agency, and City are working together to include design features that would make the entrances more aesthetically pleasing. These design features could include adding pigmentation to the concrete, applying surface treatments such as texture or shaping, and narrowing the overall inlet structure based on updated hydraulic modeling. Overall, implementation of the ~~Proposed Action~~ Bypass System Alternative would neither substantially damage scenic resources nor substantially degrade the existing visual character of the project site. Finally, the armored riverbed would not create a new source of substantial light or glare.

Response to Comment CSC-3

Additional information on the public safety effects of the box culverts has been added to the Draft EIR/SEIS.

The following change is made to the Draft EIR/SEIS:

Page 5-69. Section 5.8.3.2, "Operation and Maintenance," is modified as follows:

5.8.3.2 Operation and Maintenance

The inlets and outlets to the bypass system would not be fenced; access to the bypass culverts would not be physically controlled, although signs would be posted warning the public that entry to the bypass is prohibited. In addition, the Corps and SCVWD will install a warning system that will provide adequate warning to allow persons trespassing in the bypass time to exit during a flood event.

Several options for preventing human ingress into the box culvert were considered by the Corps, SCVWD, City of San Jose and the Redevelopment Agency of San Jose including trash racks and roll-up doors. These options were eliminated from consideration because of the potential for these structures to become obstructed during floods and not operate as anticipated, and because of the required additional maintenance costs.

The City of San Jose Police Department periodically patrols isolated areas for illegal activities and homeless encampments. The bypass system would be included in these patrols. While the police may need to patrol this additional area, there would not likely be a substantial increase in the level of patrol effort and the inclusion of the no trespassing signs would allow police officers to enforce the law more easily (Dalaison, pers. comm.).

Response to Comment CSC-4

The discussion of recreation trails and effects on recreation has been updated.

The following changes are made to the Draft EIR/SEIS:

Pages 6-10 and 6-11. The last paragraph on page 6-10, which continues onto page 6-11, is modified as follows:

The Lower Guadalupe River Project EIR/EIS will address a full range of alternatives for flood protection downstream from I-880 and for conveying floodflows downstream from Alviso. The alternatives will be designed to contain the increased flows that would result from the operation of the Guadalupe River Project with ~~Proposed Action~~ Bypass System Alternative and the Upper Guadalupe River Project and to minimize or avoid impacts on environmental resources in the Guadalupe River watershed, including listed species and their habitat. Flood protection elements could include raising

existing levees, setting levees farther back from the river, constructing offstream storage, constructing flood bypasses, dredging the channel, or a combination of some or all of these elements. The Lower Guadalupe River Project EIR/EIS will address the potential direct, indirect, and cumulative impacts of each alternative on natural resources in the Guadalupe River watershed, including the Alviso Slough area. SCVWD will consult with USFWS's Endangered Species Division regarding the potential hydrologic and hydraulic impacts of the Lower Guadalupe River Project. If an impact is identified, appropriate mitigation measures will be included in the EIR/EIS and BA for the Lower Guadalupe River Project, and SCVWD will prepare an MMP for the Lower Guadalupe River Project for review and approval by the Endangered Species Division. Included in the alternatives screening and impact analyses will be the assessment of the potential effect of alternatives on public access to existing and future trails along the Guadalupe River corridor as well as potential effects on the Alviso Marina County Park.

Page 6-66. Section 6.2.9, "Recreation, Public Access, and Visual Resources," is modified as follows:

6.2.9 Recreation, Public Access, and Visual Resources

The Guadalupe River Project with ~~Proposed Action~~ Bypass System Alternative in combination with the other major projects indicated in Section 6.2.1, "Projects Addressed in the Cumulative Impact Analysis," could result in a short-term cumulative impact on recreational opportunities along the Guadalupe River and access to the river corridor. This cumulative impact is considered less than significant because construction of the projects would not occur simultaneously and the projects would not directly affect parks or other formal river access points. The Guadalupe River Project with ~~Proposed Action~~ Bypass System Alternative would not contribute to a cumulative impact on boating because the project features would accommodate existing opportunities for boating.

Construction of the ~~Proposed Action~~ Bypass System Alternative in combination with other projects along the river corridor would affect the visual character of the river corridor by removing riparian vegetation. However, successful implementation of SRA cover and riparian vegetation mitigation would restore much of the aesthetic character of the river corridor. Replanting riparian vegetation in areas along the river disturbed during construction of each project, in combination with mitigation plantings proposed for Reach A, would result in a less-than-significant cumulative impact on visual resources.

The Guadalupe River Project with ~~Proposed Action~~ Bypass System Alternative, the Guadalupe River Park Project, and the Upper Guadalupe River Project would result in additional recreation opportunities along the Guadalupe River. The potential impact of the Lower Guadalupe River Project on recreation cannot be identified until the final design of the Lower Guadalupe River Project has been determined. It is possible, however, that

some cumulative impacts may result. Any potential impacts that the Lower Guadalupe River Project may have on recreation will be considered in the design and analyzed in the environmental review of the Lower Guadalupe River Project.

Memorandum

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

TO: Councilmember Frank Fiscalini,
Chair, Guadalupe River Park & Gardens
Task Force

FROM: Cindy Chavez,
Councilmember

SUBJECT: Box Culvert

DATE: August 9, 2000

Approved

Date

I would like to express my concerns and submit my comments regarding the proposed design of the inlet structure for the proposed box culvert downstream of Santa Clara Street and Saint John Street. The current design calls for a structure approximately 250 feet in length, the equivalent of a 10-story building laid on its side along the Guadalupe River. My concerns about this design revolve around safety issues and its aesthetic appearance. CSJ-1

The design does not incorporate some type of security gates or bars into the box culvert. This is a concern because the lack of security gates or bars will encourage trespassing by the homeless, those seeking a place to commit illegal activities or curious minded children. For safety reasons I would like the Army Corps of Engineers to consider some version of security gates or bars that will discourage trespassing. CSJ-2

The second concern I have is on the appearance of the culvert. The current design does integrate the structure into the surrounding landscape. The sight to visitors to the River Park will be that of a monolithic, concrete structure with no aesthetic appeal whatsoever. I would like the Corps to consider how incorporating a design that compliments the natural beauty of the river and vegetation can minimize the visual impact of this culvert. CSJ-3

City of San Jose, Cindy Chavez (August 9, 2000)

Response to Comment CSJ-1

Public safety and aesthetic appearance of the bypass are addressed in Responses to Comments CSJ-2 and CSJ-3, respectively.

Response to Comment CSJ-2

The Corps, SCVWD, Redevelopment Agency of San Jose, and City of San Jose have discussed this concern in great detail. Public safety is of the utmost concern to all, and the Corps is committed to building Project that is safe. However, security gates or bars would not eliminate trespassing completely because gates can be opened and bars can be cut. Illegal trespassers could even hurt themselves trying to circumvent these preventative structures. Gates that swing open, mechanical gates, and garage door-type structures have all been thoroughly discussed. The main purpose of the Guadalupe River Project is to provide flood protection while minimizing environmental impacts along the Guadalupe River within downtown City of San Jose. Security gates and bars would greatly reduce the efficiency of the inlet structures, and the debris loads that would be expected on these gates or bars would be significant.

See Response to Comment CSC-3. Section 5.8.2.3, "Operation and Maintenance," has been updated to better describe the effects on public safety associated with the bypass system.

Response to Comment CSJ-3

As indicated in Section 5.8.3.4, "Visual/Aesthetic Resources," the impact of constructing the flood control feature on the visual character of the Guadalupe River is considered less than significant. The Corps is working with SCVWD, the Redevelopment Agency of San Jose, and the City of San Jose to investigate various concrete surface textures and/or color treatments to minimize this impact. In addition, the Corps is also looking at structure alternatives for the various concrete retaining walls, such as gabions and open-celled concrete cylindrical matting that would allow for the long-term possibility of vegetation becoming established. However, many of these alternatives may negatively affect the inlet structure's hydraulic characteristics; these negative effects would require an increase in the size of the inlet structure, which would also be a concern. The Corps, SCVWD, the City of San Jose, and the Redevelopment Agency of San Jose will continue to define various aesthetic options as possibilities for the project's inlet structures. These options will be discussed at the City of San Jose's future monthly Technical and Task Force Meetings.

The Corps, SCVWD, the Redevelopment Agency of San Jose, and the City of San Jose are working together to include design features that would make the inlets as aesthetically pleasing as possible.

STATE OF CALIFORNIA - BUSINESS, TRANSPORTATION AND HOUSING AGENCY GRAY DAVIS, Governor

DEPARTMENT OF TRANSPORTATION
P O BOX 23660
OAKLAND, CA 94623-0660
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July 31, 2000

SCL-87-0.69
1999102056
SCL087066

Mr. Terry Neudorf
Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118

Dear Mr. Neudorf:

Draft Environmental Impact Report (DEIR) for the Guadalupe River Project, Santa Clara Valley Water District

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the proposed project. We have examined the above-referenced document and have the following comments:

GENERAL COMMENTS

Our concerns regarding the Proposed Action addressed in the DEIR are related to its interface with, and potential conflict with, a component of the State Route (SR) 87 Freeway Project. The following paragraphs provide a brief history of the extensive interface between the freeway and flood control projects, which provides the context for our comments on the subject document. The SR 87 Freeway Project, which is presently under construction, will upgrade SR 87 from a 4-lane expressway to a 6-lane freeway between Julian Street and U.S. 101. The Santa Clara Valley Water District (SCVWD), a co-sponsor of the US Army Corps of Engineers (Corps) Proposed Action, has been a full member of the SR 87 Project Development Team (PDT) since 1987. Over the past 13 years, SCVWD staff has participated in numerous SR 87 meetings/workshops, especially regarding locations where the freeway project interfaces with the Guadalupe River. Several important decisions were made between the SCVWD and Caltrans:

1. In 1989, the portion of the SR 87 project north of Interstate-880 (I-880) was redesigned - in coordination with the SCVWD - to include improvements to the east bank/levee of the Guadalupe River. The purpose of the redesign was to 1) increase the capacity of the Guadalupe River in the area so that it can convey the 100-Year flood flow, and 2) to allow for Caltrans to create high-quality riparian habitat on the east side of the low-flow channel of the River. [This is referenced on page 30 of the Approved Route 87 Final EIS/EIR, September 1993.] CT-1

2. In 1992, the SCVWD committed to leaving the SR 87 riparian mitigation areas undisturbed. CT-2

3. In December 1996, after numerous meetings/workshops between Caltrans and SCVWD - including several HEC II model runs by SCVWD staff - an agreed-upon plan for SR 87 mitigation plantings north of I-880 was reached. The plan accomplished two important goals: 1) the plantings would not increase the 100-Year water surface elevation in the River at I-880, and 2) the mitigation area was assumed to have zero hydraulic capacity in the HEC II runs. This latter point was important to Caltrans because of requirements from various Regulatory Agencies – US Fish and Wildlife Service (USFWS), Environmental Protection Agency (EPA), and California Department of Fish and Game (CDFG), that the mitigation plantings not be disturbed during ongoing flood control maintenance activities. CT-3

The SR 87 Project has received all of the necessary permits from both the CDFG and the Corps. The permits are conditioned upon Caltrans implementing riparian mitigation at the agreed-upon locations along the east bank of the River north of I-880. The planned acreage of the SR 87 project mitigation is 10.95 acres. CT-4

In the context of the above background, Caltrans' primary concern is that the Proposed Action does not conflict with the SR 87 Freeway Project, especially the agreed-upon mitigation north of I-880. Our specific concerns are:

1. The Proposed Action's shaded riverine aquatic (SRA) plantings in Reach A must not conflict with the Caltrans' SR 87 project mitigation plantings. CT-5

2. Any reduction in the hydraulic capacity of the Guadalupe River due to the Proposed Action's SRA plantings in Reach A must not be recouped through the periodic removal of plantings within the SR 87 mitigation area. CT-6

SPECIFIC COMMENTS ON THE DEIR

- Page 4-31, in the last sentence of Section 4.4.1.2, please change the "more than 7" to "approximately 10.95". CT-7
- Page 4-59, please add SR 87 to the description of existing roadways. CT8
- Page 4-67, the discussion of existing cultural resources omits the significant site of the former Wollen Mills Chinatown adjacent to the Guadalupe River at Taylor Street. CT-9
- Page 5-4, please include a discussion in Section 5.1 as to whether or not the proposed SRA plantings in Reach A will result in a reduction of the hydraulic capacity of the Guadalupe River. If so, will such a reduction necessitate future removal of vegetation within the SR 87 mitigation site located in that same reach? If the answer to this question is "yes", that fact should be disclosed as a significant impact in Section 5.4 and mitigation should be provided. CT-10

- Page 6-5, the discussion of riparian impacts and mitigation in Section 6.2.1.2 is outdated. Current figures are as follows: Impacts to riparian habitat = 5.72 acres; Impacts within Corps' jurisdiction = 0.02 acres; Riparian mitigation to be planted = 10.95 acres. CT-11
- The discussion in Section 6.2.1.2 should be revised to include an overview of the extensive coordination and interface between the SR 87 freeway and flood control projects. CT-12
- Page 6-5, Section 6.2.1.3: SR 85 was completed in 1996, not 1994. CT-13
- Page 6-35, Table 6.2-4 should be revised where it pertains to the SR 87 project. See the comment for page 6-5, above. CT-14

Should you require further information or have any questions regarding this letter, please call Haiyan Zhang of my staff at (510) 622-1641.

Sincerely,

HARRY Y. YAHATA
District Director

By Jean CR Finney

JEAN C. R. FINNEY
District Branch Chief
IGR/CEQA

c: State Clearinghouse

DEPARTMENT OF TRANSPORTATION, HARRY Y. YAHATA AND JEAN C.R. FINNEY (JULY 31, 2000)

Response to Comment CT-1

Comment noted. See Response to Comment CT-5.

Response to Comment CT-2

Comment noted. See Response to Comment CT-5.

Response to Comment CT-3

Comment noted. See Response to Comment CT-6.

Response to Comment CT-4

Comment noted. See Response to Comment CT-5 and CT-7.

Response to Comment CT-5

The SRA cover vegetation plantings in Reach A associated with the Guadalupe River Project with Bypass System Alternative will not conflict with the State Route 87 mitigation planting. A Caltrans representative (Raffoul, pers. comm.) was contacted in August 1999 regarding the proposed SRA cover vegetation plantings in Reach A to determine if there was a potential conflict between the Caltrans riparian mitigation site and the proposed Guadalupe River Project SRA cover vegetation mitigation sites. Mr. Raffoul indicated that the Caltrans plantings would be located at least 15 feet from the river's edge. The proposed width of the SRA cover vegetation planting sites for the Guadalupe River Project would be within 15 feet of the river's edge. No grading or extensive site preparation is anticipated for the SRA cover vegetation planting sites.

A recent modification of the hydraulic analysis performed for Reach A revealed that additional excavation at the mitigation bench will improve the conveyance capacity of the channel. The Corps and SCVWD are currently working with Caltrans to determine if excavating the mitigation bench can be conducted as part of the State Route 87 project.

Response to Comment CT-6

The Corps and SCVWD have no plans to periodically remove plants from the Caltrans mitigation area to achieve a design roughness in Reach A. The maintenance plan for the State Route 87 project will define the actions that can be taken in or adjacent to the planted area for flood protection. For example, the plan will define measures or criteria to address proliferation of plants from volunteer seedlings in or adjacent to the mitigation area and removal of, blockages, obstructions, and downed trees.

Response to Comment CT-7

The following change is made to the Draft EIR/SEIS:

Page 4-31. Section 4.4.1.2, "Reach A Mitigation Site," is modified as follows:

> The riparian habitat is made up of a tall tree canopy dominated by native and nonnative tree species. The understory is dominated by native and nonnative woody and herbaceous vegetation. The structure of the vegetation, including the density and number of canopy layers, varies throughout the Reach A mitigation site. Native tree species include cottonwood, black walnut, willow, and elderberry. Nonnative species include several Prunus species, holly oak (*Quercus ilex*), blue gum eucalyptus, and California pepper tree (*Schinus molle*). The understory shrub layer includes coyote brush and elderberry. The herbaceous understory consists of mugwort (*Artemesia douglasiana*), rice grass (*Oryzopsis miliacea*), fennel (*Foeniculum vulgare*), and black mustard (*Brassica nigra*). Noxious weeds, including giant reed (*Arundo donax*) and castor bean (*Ricinus communis*), are present in the understory of the riparian forest. Caltrans is also proposing to plant ~~more than 7~~ approximately 10.95 acres of riparian habitat on the upper banks of Reach A to mitigate for effects of the State Route 87 project.

Response to Comment CT-8

The following change is made to the Draft EIR/SEIS:

Page 4-59. Section 4.9.1, "Existing Road and Bridges," is modified as follows:

4.9.1 Existing Roads and Bridges

> Segments 1, 2, and 3 and Reach A are located on the northwest edge of downtown San Jose, southwest of San Jose International Airport. Major surface streets in the project area include Santa Clara Avenue, New Julian Street, Old Julian Street, St. John Street, Coleman Avenue, Park Avenue, and Woz Way. Old Julian Street has ~~already~~ been closed ~~and St. John Street is slated for replacement with a pedestrian bridge~~. The most recent San Jose

General Plan includes a list of streets designated as major collectors for the year 2020. ~~None of the streets crossed by the proposed bypass system is classified as a major collector~~ Julian Street and Santa Clara Street, which are both crossed by the proposed bypass system, are classified as arterials in the San Jose General Plan (City of San Jose, 1994). Freeways that traverse the area include I-880, ~~and~~ I-280, and State Route 87, currently being upgraded to freeway standards. Table 4.9-1 gives traffic volumes for major roads that would be used as haul routes. The study area would also cross UPRR tracks No. 3 and No. 4. The tracks intersect the Guadalupe River between Old Julian Street and Coleman Avenue in the northern portion of the project site.

Response to Comment CT-9

The following change is made to the Draft EIR/SEIS:

Page 4-68. Section 4.14.2, "Previous Cultural Resources Investigations and Known Cultural Resources," is modified as follows:

4.14.2 Previous Cultural Resources Investigations and Known Cultural Resources

The study area has been extensively evaluated over a number of years, and its cultural resources were documented in the September 1990 EA, the 1985 Guadalupe River Interim Feasibility Report and Environmental Impact Statement, and the 1989 EIR for the Guadalupe River Park (City of San Jose, 1989), and the Upgrade of the Guadalupe Parkway, San Jose Historic Properties Treatment Plan (California Department of Transportation, 1999). As discussed in these reports and studies, the area that would be directly affected by construction activities related to the ~~Proposed Action~~Bypass System Alternative contains no recorded prehistoric sites. Unidentified prehistoric sites may be located in the study area, but any that may be present are probably deeply buried under alluvium deposited by repeated flooding. However, historic resources have been identified in and around the study area, most recently the Wollen Mills Chinatown adjacent to the Guadalupe River at Taylor Street. These resources include structures and foundations from various phases of industrial and residential development. Although a large number of identified historic resources in the project area were demolished or moved as part of other projects or were determined to be ineligible for NRHP listing, some historic resources in the area were identified as having potential historic significance.

Response to Comment CT-10

The hydraulic analyses prepared for the Bypass System Alternative (Northwest Hydraulic Consultants, 1999) does not include segments of the river downstream from I-880. SCVWD provided a target elevation of 17.86 m to the Corps for the upstream face of I-880.

The baseline hydraulic evaluations completed for SCVWD's Lower Guadalupe River Flood Protection Project assume that Caltrans' State Route 87 and the Guadalupe River Flood Protection Projects Reach A mitigation plantings are installed. Manning's n values for the SRA plantings were estimated to be 0.14, and composite n values for the entire overbank area were estimated to be 0.042 to 0.075, depending on the number of rows of trees planted. An additional model run was completed assuming the composite overbank n values ranged from 0.05 to 0.10. Under the higher overbank n value assumption, the calculated water surface at the upstream face of I-880 was still below SCVWD target elevation of 17.86 m. (Northwest Hydraulic Consultants, 2000).

Response to Comment CT-11

The discussion of riparian impacts and mitigation associated with the State Route 87 Freeway Upgrade Project is updated to reflect the current figures.

The following change is made to the Draft EIR/SEIS:

Page 6-5. The second and third paragraph of Section 6.2.1.2, "State Route 87 Freeway Upgrade Project," is modified as follows:

> Freeway widening and bridge construction from Highway 101 to New Julian Street resulting from implementation of the State Route 87 Freeway Upgrade Project will affect 1.09 acres of wetlands under the jurisdiction of the Corps and ~~4.54~~ 5.72 acres of riparian habitat. The project includes construction of a top-of-bank trail along the east bank of Segments 1 and 2 of the Guadalupe River. Construction began in 1999 and will be completed in ~~2001~~2003. This project will have no long-term impacts on fish resources.
>
> Mitigation for loss of riparian habitat and wetlands that would result from the State Route 87 Freeway Upgrade Project requires the planting of ~~7.29~~ 10.95 acres of riparian habitat adjacent to the east side of the Guadalupe River ~~and establishing 1.09 acres of wetlands~~ (David Powers and Associates, 1993, Vincent, pers. comm., Hessler, pers. comm.).

Response to Comment CT-12

Section 6.2.1.2, "State Route 87 Freeway Upgrade Project," has been revised to include an overview of the coordination between SCVWD and the California Department of Transportation on the State Route 87 Freeway Upgrade Project and the Guadalupe River Project with Bypass System Alternative.

The following change is made to the Draft EIR/SEIS:

Page 6-5. The first paragraph of Section 6.2.1.2, " State Route 87 Freeway Upgrade Project," is modified as follows:

6.2.1.2 State Route 87 Freeway Upgrade Project

The State Route 87 Freeway Upgrade Project will convert the existing four-lane Guadalupe Parkway (State Route 87) to a six-lane freeway between Julian Street and Highway 101 and includes the construction of the Skyport Bridge. State Route 87 improvements are designed to relieve severe congestion along Guadalupe Parkway and to improve access to downtown San Jose, the Civic Center area, and San Jose International Airport. The target date for completion of the State Route 87 Freeway Upgrade Project is December ~~2001 (City of San Jose, 1999)~~ 2003 (Gonzales, pers. comm.). SCVWD has been a full member of the State Route 87 Project Development Team since 1987. Over the past 13 years, SCVWD staff has participated in numerous State Route 87 meetings and workshops, especially those regarding locations where the freeway project interfaces with the Guadalupe River. The Corps and SCVWD will continue to coordinate with the California Department of Transportation and the Valley Transportation Authority on the design and construction activities of the Guadalupe River Project and the State Route 87 Freeway Upgrade Project.

Response to Comment CT-13

The following change is made to the Draft EIR/SEIS:

Page 6-5. Section 6.2.1.3, "State Route 85 Transportation Corridor Project," is modified as follows:

6.2.1.3 State Route 85 Transportation Corridor Project

The State Route 85 Transportation Corridor Project was completed in ~~1994~~1996. It directly affected 0.1 acre of riparian vegetation along the main stem Guadalupe River and indirectly affected 4.5 acres on Los Gatos and Ross Creeks. Mitigation for the loss of riparian habitat required the planting of 12.1 acres of riparian vegetation onsite and 0.2 acre offsite (Monette, pers. comm.). Bridge construction under this project did not adversely affect fisheries, and fish passage was provided to ensure that there would be no adverse impacts on fish resources in Ross Creek (Monette, pers. comm.).

Response to Comment CT-14

See Response to Comment EPA-19 for modifications to Table 6.2-4.

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September 6, 2000

Nina Bicknese
U.S. Army Corps of Engineers
1325 J Street
Sacramento, CA 95814

Terry Neudorf
Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118

Re: **Draft General Re-Evaluation and Environmental Report for Proposed Project Modifications: Guadalupe River Project (June 2000)**

Dear Ms. Bicknese and Mr. Neudorf:

We attach a technical review prepared by Dr. Stacy Li.

We submit one additional comment. The draft report concludes that the preferred alternative may have a significant adverse impact on channel form in Segments 1 and 2. (Table 5.15-1, p. 5-87). Erosion there may increase five-fold on an average annual basis, and ninety-fold in the design flood. (Figure 5.2-1 and 5.2-2). If so, this impact may extend far downstream where eroded sediments will eventually be transported, and even upstream. Although we acknowledge that these estimates of erosion rates may be overstated (p. 5-15), and further that the project sponsors are generally committed to maintenance or other corrective action on the basis of post-construction monitoring (p. 5-16), this impact may threaten the achievement of management objectives (p. 8-1) for this Project. It may degrade the capacity of the lower Guadalupe Project to pass the design flood, and also the stability and effectiveness of environmental mitigation measures undertaken in Segments 1and 2 and downstream. We request that the final report contain a systematic analysis of alternative strategies to prevent or reduce this impact.

GCRCD-1

As a general matter, I express our gratitude for the outstanding quality of the draft report, and for the project sponsors' continuing commitment to provide flood protection in a manner that protects and enhances the other beneficial uses of the Guadalupe River.

Thank you for your consideration of these comments.

Sincerely,

Richard Roos-Collins

Richard Roos-Collins
NATURAL HERITAGE INSTITUTE

Attorney for GUADALUPE-COYOTE RESOURCE CONSERVATION DISTRICT, TROUT UNLIMITED, AND PACIFIC COAST FEDERATION OF FISHERMENS' ASSOCIATIONS

TECHNICAL COMMENTS OF DR. STACY LI, CONSULTANT, GUADALUPE-COYOTE RESOURCE CONSERVATION DISTRICT, TROUT UNLIMITED, AND PACIFIC COAST FEDERATION OF FISHERMENS' ASSOCIATIONS, ON DRAFT GENERAL RE-EVALUATION AND ENVIRONMENTAL REPORT: GUADALUPE RIVER PROJECT (June 2000)

Chapter 4. Affected Environment

4.6.3.5 Water Temperature (p. 4-52)

General comment: This entire section relies on general literature that may or may not be relevant in the Santa Clara Valley. It uses a classification (optimal, suboptimal, and lethal) that most readers will assume is reality, when it is merely inference. GCRCD-2

Statement: "In the Guadalupe River between the Guadalupe River-Los Gatos confluence and at I-880, existing water temperatures for some life stages are frequently lethal."

Comment: This statement is misleading. There are no data demonstrating lethality. The assumption of lethal temperatures is based upon literature review and the creation of a class called lethal. There is a lack of site specific suitability criteria for water temperature for anadromous salmonids. GCRCD-3

Statement: "Water temperatures currently limit successful spawning of steelhead in the mainstem Guadalupe River to January and February. Water temperature lethal to incubating steelhead eggs generally occur in the main stem Guadalupe River by April."

Comment: This statement is also misleading. There are no data on steelhead spawning success in the Guadalupe River. The statement is an inference based upon literature review of anadromous salmonid water temperatures. The literature has a geographical bias since virtually all studies have been in Oregon, Washington, and British Columbia. The physiological and ecological responses of anadromous salmonids from Central California to water temperature may be much different than those from the Pacific North-west. GCRCD-4

Chapter 5. Environmental Consequences

5.1.3.1 Channel Capacity (p. 5-4)

Statement: "The HEC-RAS modeling results show ….."

Comment: Does this HEC model account for effects of bedload transport on channel capacity or is this a clear water model? If HEC does not account for geomorphological processes what other studies account for this effect? Section 5.2.3.12, "Channel Erosion and Deposition," essentially states that effects of erosion and sedimentation can not be determined. GCRCD-5

5.3.3.4 Water Temperature (page 5-22)

Statement: "Therefore, the actual postproject effect of the Guadalupe River Project with Proposed Action on water temperature will be less than indicated by the JSATEMP simulation"

Comment: Since work in segments 1 and 2 removed SRA, these works increase river water temperatures. It is true that the magnitude of water temperature increase is less, but the increase in water temperatures related to this project is as bad as the JSATEMP simulation because the increase in water temperature is from an elevated temperature and less suitable for anadromous salmonids. GCRCD-6

Statement: "Postproject water temperature decrease in the downtown area because riparian vegetation would be removed."

Comment: This makes no sense. Water temperatures will increase with the removal of shade. GCRCD-7

Id. (page 5-27)

Statement: "New SRA cover vegetation and riparian vegetation planted for project mitigation would begin to reduce water temperatures from the postproject peak values as soon as they begin to provide shade to the water surface approximately five years following construction."

Comment: What is planned to mitigate for loss of SRA in the meantime? GCRCD-8

Chapter 5.6.4.1 Adult and Juvenile Anadromous Fish Migration, River Morphology Effects (page 5-59)

Statement: "The proposed Action includes armoring a portion of the channel bed with concrete cellular mattresses (CCM)."

Comment: This increases velocity and perhaps stage. Does it also increase the risk of bank failure? GCRCD-9

Chapter 5.6.4.3 Resident and Anadromous Fish Rearing, Water Temperature Effects (page 5-64)

Statement: "Most juveniles probably migrate from the river prior to May."

Comment: What data were used to make this inference? GCRCD-10

Id. (page 5-65)

Statement: "Juvenile steelhead could move, relocating from warm areas in segments 1, 2, and 3 to habitat with more suitable water temperatures, including deeper pools, and local areas of cool water inflows in Segments 1, 2, and 3 and cooler upstream reaches and tributaries." GCRCD-11

Comment: This is a real reach. The Proposed Action will warm the stream. Having the fish move to more ideal areas assumes access to these areas (there are many passage impediments, especially to juveniles) and no impact of increasing abundance density. GCRCD-11

Id. (page 5-65)

Statement: "Water temperatures would cool in the entire project area...." GCRCD-12

Comment: This paragraph is misleading because it provides no time frame when post mitigation would occur. How long will it be before any cooling occurs? Is this thirty or forty years?

Chapter 6.2.4.4 Temperature (page 6-28)

Statement: "Under postmitigation conditions for the combined Upper Guadalupe River Project and the Guadalupe River with Proposed Action, shade provided by plantings of riparian vegetation would reduce water temperatures to below postproject levels." GCRCD-13

Comment: When?

GUADALUPE-COYOTE RESOURCE CONSERVATION DISTRICT, ET AL., RICHARD ROOS-COLLINS AND STACY LI (SEPTEMBER 6, 2000)

Response to Comment GCRCD-1

Since publication of the Draft EIR/EIS, preliminary results from the movable bed numeric study (HEC-6) analysis have become available and the text of Section 5.2, "River Geomorphology," has been revised to include the results of this study. The new text explains that the HEC-6 analysis of sediment transport does not support the previous conclusion regarding the potential for erosion downstream from Coleman Avenue. The conclusion of this analysis is that the project would cause a less-than-significant adverse effect on channel erosion and deposition in Segments 1, 2, and 3. See Response to Comment EPA-12 for the revised text.

Response to Comment GCRCD-2

Studies of the response of chinook salmon and steelhead life stages to water temperature have not been conducted specifically for the Guadalupe River. The best available water temperature literature and criteria were used in the description of current habitat conditions in the Guadalupe River system and the impact assessment for steelhead and chinook salmon. The same criteria were used in the BA that was prepared for Endangered Species Act consultation with NMFS and in the MMP (Volume 2, Appendix 3).

Water temperature conditions have been recognized in the MMP as an area of concern related to project effects. The MMP allows for future consideration of new information. An Adaptive Management Team will direct and implement the adaptive management process during project construction and for the life of the project. The adaptive management process will ensure that ecological functions and habitat values affected by the project are reestablished. The following Adaptive Management Team activities related to water temperature have been specifically identified in the MMP, and additional actions may be taken based on new information related to species water temperature needs. These activities include:

- The Adaptive Management Team will determine the model used to simulate water temperature for preproject and postproject weather and flow conditions.
- Temperature monitoring may be extended through the life of the project if determined necessary by the Adaptive Management Team.
- The Adaptive Management Team will determine the need for heat transfer measurements after year 10.
- The Adaptive Management Team will determine the need for stream channel geometry measurements after year 10.
- The Adaptive Management Team will assess the need and select appropriate remedial actions if the identified measurable objectives are not met.

Response to Comment GCRCD-3

The optimal, suboptimal, and lethal classification are provided in Table 4.6-1 and are based on the best available water temperature literature. See Response to Comment GCRCD-2 relative to water temperature criteria used in the description of current habitat conditions in the Guadalupe River system and the impact assessment for steelhead and chinook salmon.

The following change is made to the Draft EIR/SEIS:

Page 4-52. Section 4.6.3.5, "Water Temperature." The first sentence in the third full paragraph is modified as follows:

> In the Guadalupe River between the Guadalupe-Los Gatos confluence and at I-880 (Figures 4.6-2 and 4.6-3), existing water temperatures for some life stages are frequently in the lethal range.

Response to Comment GCRCD-4

Please see Responses to Comments GCRCD-2 and GCRCD-3.

The following change is made to the Draft EIR/SEIS:

Page 4-52. Section 4.6.3.5, "Water Temperature." The fourth sentence in the third full paragraph is modified as follows:

> Water temperatures lethal range for ~~to~~ incubating steelhead eggs generally occur in the main stem Guadalupe River by April; successful spawning and incubation may therefore be restricted to tributary streams.

Response to Comment GCRCD-5

The HEC-RAS model does not account for the effects of bedload transport on channel capacity. Since publication of the Draft EIR/SEIS, preliminary results from the HEC-6 analysis have become available and the text of Section 5.2, "River Geomorphology," has been revised to include the results of this study. See Response to Comment EPA-12 for the revised text.

Response to Comment GCRCD-6

The preproject simulation assumes that Segments 1, 2, and 3 have not been constructed. As explained in the text on page 5-22 (Volume I), the simulated increase in water temperature in Segments 1, 2, and 3 under the Guadalupe River Project with Bypass System Alternative reflect the full effect of vegetation removal without the mitigating effect of new plant growth. Segments 1 and 2 were completed in 1994 and 1996, and SRA cover vegetation has

already reestablished some of the shade removed during construction. Therefore, the temperature increase for these segments should not be as high as was simulated for the assessment.

Response to Comment GCRCD-7

The error was typographical. The impacts and mitigation identified have not changed. The following change is made to the Draft EIR/SEIS:

Page 5-22. Section 5.3.3.4, "Water Temperature," is modified as follows:

> Figures 5.3-1 through 5.3-4 show the monthly average and average maximum water temperatures simulated for the Guadalupe Creek mitigation site, Segment 3, Segments 1 and 2, and the Reach A mitigation site, respectively. In Guadalupe Creek, postproject temperatures remained the same as preproject temperatures because no vegetation removal or changes to the channel shape would occur (Figure 5.3-1). Postproject water temperatures would ~~decrease~~ increase in the downtown area because riparian vegetation would be removed.

Response to Comment GCRCD-8

Short-term increases in water temperature resulting from project construction cannot be avoided. However, for the reasons described in Section 5.6.4, "Bypass System Alternative," postproject increases in water temperature would not be expected to significantly affect the abundance and distribution of chinook salmon or steelhead in the Guadalupe River system for several reasons:

- Postproject and postmitigation water temperatures from November through February would be similar to those existing under current conditions. Water temperatures during the anadromous fish migration period would be within the range that would support migration of adult and juvenile chinook salmon and steelhead.
- Postproject water temperatures from November through February would be similar to those of preproject conditions. Increases in water temperatures attributable to the project would be less than 1 °F during the primary spawning period and have minimal effect on spawning success.
- Water temperature in some segments, as represented in the water temperature model (JSATEMP), would be within the range that would support rearing of juvenile steelhead.
- Postproject temperatures from March to May would be within the range that would support juvenile chinook salmon.

- Juvenile steelhead could move, relocating from warm areas in Segments 1, 2, and 3 to habitat with more suitable water temperatures, including deeper pools and local areas of cool water inflows in Segments 1, 2, and 3 and cooler upstream reaches and tributaries.
- The recent improvements in fish passage, discussed in Section 5.6.4.1, "River Morphology Effects," will increase the amount of suitable habitat available to fish in the upper Guadalupe River watershed areas. These areas are accessible to adult steelhead and chinook salmon and usually have water temperature conditions that are optimal for sensitive life stages.

In addition, water temperature (Section 4.4, "Water Temperature" of the MMP) and anadromous fish occurrence (Section 4.7, "Anadromous Fish Occurrence" of the MMP) would be monitored. If the measurable objective for the short-term suitability indicator has not been met, the Adaptive Management Team would determine the appropriate remedial action. Potential remedial actions that may be considered by the Adaptive Management Team include increasing the density of plantings of SRA cover vegetation in the Guadalupe River Project area with large, fast-growing tree stock; increasing the water depth by adjusting the invert stabilization structures and low-flow channel check-structures in Segments in 3A and 3B; augmenting flow with cool water; and planting additional offsite mitigation areas (Section 4.4.3.3, "Short-Term Suitability Indicator for Anadromous Fish Habitat").

Response to Comment GCRCD-9

The hydraulic analysis conducted for the project indicates that at some locations the resultant velocities would be high enough to cause channel bed and bank erosion. In these high velocity areas, such as downstream and upstream from the Coleman Avenue bridge, it was proposed that CCM be used to protect the channel bed from erosion (U.S. Army Corps of Engineers, 1991b and 1993, U.S. Army Corps of Engineers - WES, 1996, and Northwest Hydraulic Consultants, 1999). The CCM does not directly increase the velocity or stage. The CCM is used to mitigate the effects of increased velocity and reduce the risk of erosion and bank failure.

Response to Comment GCRCD-10

Please see the discussion in Appendix 1C.1, "Thermal Effects on Life Stages of Steelhead and Chinook Salmon." Appendix 1C is cited in the referenced paragraph. The expected migration of juveniles before May is based on water temperature requirements during smoltification. Water temperatures that may inhibit smoltification occur after March and April. Additional support of migration before May is provided by the juvenile outmigration data collected by SCVWD (Abel, pers. comm.). Few outmigrating steelhead have been captured during May and June.

Response to Comment GCRCD-11

Selection of habitats with appropriate water temperatures and avoidance of areas with high water temperatures have been documented for rainbow trout and steelhead (Raleigh et al., 1984, Nielsen et al., 1994). Steelhead in the Guadalupe River system would also be expected to move to habitats with cooler water temperatures. However, the movement of juvenile steelhead is only one factor supporting the conclusion of a less-than-significant effect (page 5-65). Additional factors described in the Draft EIR/SEIS (page 5-65) include:

- Postproject temperatures from March to May would be within the range that would support juvenile chinook salmon.
- SRA cover mitigation plantings would increase shade and cool water temperatures in the project area.
- Recent improvements in fish passage will increase the amount of habitat available to fish in the upper Guadalupe River watershed.

In addition, see Response to Comment GCRCD-8 for a description of actions that are included in the MMP (Volume 2, Appendix 3) and will further ensure that water temperature conditions will continue to support steelhead and chinook salmon.

Response to Comment GCRCD-12

The text in the EIR/SEIS is modified to provide more information on the timing of the cooling effect of mitigation plantings.

The following change is made to the Draft EIR/SEIS:

Page 5-65. Section 5.6.4.3, "Resident and Anadromous Fish Rearing," is modified as follows:

> Water temperatures would cool in the entire project area following growth of SRA cover mitigation plantings and concurrent increase in shaded stream surface. Shade would begin to cool water temperatures immediately after establishment of new vegetation. The shade and cooling effect would increase over time and maximum shade value is expected at maturity of the SRA cover vegetation, within about 40 years of Project implementation. Postmitigation water temperatures in the project area would be lower than postconstruction water temperatures. However, postmitigation water temperatures in the downtown reach are expected to remain 2.5 °F to 3.5 °F warmer during the summer. Temperature conditions, however, could support juvenile steelhead most of the time. Water temperature in the Guadalupe Creek and Reach A mitigation sites would be cooler under postproject conditions because of the increased shade provided by maturation of planted SRA cover vegetation. The cooler conditions would improve habitat quality and increase the quantity of available rearing habitat.

In addition, the MMP (Volume 2, Appendix 3) describes specific measurable objectives for shade provided by SRA cover vegetation and for water temperature.

Response to Comment GCRCD-13

The text in the EIR/SEIS is modified to provide more information on the timing of the cooling effect of mitigation plantings.

The following change is made to the Draft EIR/SEIS:

Page 6-28. Section 6.2.4.4, "Temperature," is modified as follows:

> Under postmitigation conditions for the combined Upper Guadalupe River Project and the Guadalupe River Project with ~~Proposed Action~~ Bypass System Alternative, shade provided by plantings of riparian vegetation would reduce the water temperatures to below postproject levels. Shade would begin to cool water temperatures immediately after establishment of new vegetation. The shade and cooling effect would increase over time and maximum shade value is expected at maturity of the SRA cover vegetation, within about 40 years of Project implementation. ~~When it matures,~~ SRA cover vegetation planted as part of the Upper Guadalupe River Project would shade the river upstream from I-280 and reduce water temperatures in the Upper Guadalupe River Project area to levels lower than preproject levels (Figures 6.2-4 and 6.2-5).

In addition, the MMP (Volume 2, Appendix 3) describes specific measurable objectives for shade provided by SRA cover vegetation and for water temperature.

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October 30, 2000

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Terry Neudorf
Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118

Re: **Draft General Re-Evaluation and Environmental Report for Proposed Project Modifications: Guadalupe River Project (June 2000)**

Dear Ms. Bicknese and Mr. Neudorf:

The Guadalupe-Coyote Resource Conservation District, Trout Unlimited, and Pacific Coast Federation of Fishermens' Associations confirm that we support Project completion on the conditions necessary to attain the management objectives that are stated in Volume 1, pages 1-9 - 1-10, and Volume 2, Appendix 3, pages 3-1 - 3-2. This support is consistent with our execution of the "Dispute Resolution Memorandum Regarding Construction, Operation, and Maintenance of the Guadalupe River Flood Control Project" (September 1998, as amended April 1999), which is reproduced in Volume 2, Appendix 2. GCRCD2-1

Respectfully submitted,

Richard Roos-Collins

Richard Roos-Collins
NATURAL HERITAGE INSTITUTE

Attorney for GUADALUPE-COYOTE RESOURCE CONSERVATION DISTRICT, TROUT UNLIMITED, AND PACIFIC COAST FEDERATION OF FISHERMENS' ASSOCIATIONS

GUADALUPE-COYOTE RESOURCE CONSERVATION DISTRICT, ET AL., RICHARD ROOS-COLLINS (OCTOBER 2000)

Response to Comment GCRCD2-1

The Corps and Santa Clara Valley Water District acknowledge the Guadalupe-Coyote Resource Conservation District, Trout Unlimited, and Pacific Coast Federation of Fishermens' Associations' support of completion of the Guadalupe River Project.

THE REDEVELOPMENT AGENCY OF THE CITY OF SAN JOSE

August 9, 2000

U.S. Army Corp of Engineers
Attn: Ms. Nina Bicknese
1325 J Street
Sacramento, CA 95814

Dear Ms. Bicknese:

SUBJECT: DRAFT INTEGRATED GENERAL RE-EVALUATION REPORT/ENVIROMENTAL IMPACT REPORT/SUPPLEMENTAL ENVIROMENTAL IMPACT STATEMENT FOR THE PROPOSED MODIFICATIONS TO THE GUADALUPE RIVER PROJECT IN DOWNTOWN SAN JOSE.

The Guadalupe River Park and Gardens Task Force Committee appreciates this opportunity to lend its support to the Flood Control Project outlined in the DEIR/SEIS document referenced above. The Task Force is in agreement with the objectives of this project.

One objective is to provide "recreation elements compatible with local recreation plans and the 1991 GDM" (Section 1.2.4.). In particular the Task Force wished to endorse the ambition of providing recreational trail continuity along the entire length of the Guadalupe River Park and Gardens. Trail continuity is essential to the development of a linear urban park, which will provide for recreation, and provide opportunities for adjacent development of private and public facilities. RASJ-1

At the New Julian Street Bridge trail continuity is in doubt. For the area on the east bank of the river in the vicinity of New Julian Street, the report considers two alternatives (Section 8.3.7)- the Bypass System Alternative and the Refined Bypass System Alternative. The Refined Bypass System Alternative does not require gabions or other such armoring for about 200 feet in the vicinity of the Julian Street bridge. This is considered environmentally superior because it causes less change to existing conditions. However the Refined Bypass System

Alternative does not allow trail continuity under the bridge; instead the trail would be taken at street level through busy and dangerous traffic on New Julian Street.

The Task Force Committee does not endorse the Refined Bypass System Alternative. The Task Force Committee does recognize the value of preserving environmentally sensitive areas and suggests that stairs immediately adjacent to the bridge abutments can be designed sensitively to preserve the greatest amount of natural vegetation, shading and habitat. In the interest of trail continuity, the Task Force Committee urges the inclusion of a trail connection beneath the bridge with stairs up to the street level. RASJ-1

The Task Force looks forward to reviewing the final document when it becomes available. If you have any questions on this letter please don't hesitate to call.

FRANK FISCALINI
Chair
Guadalupe River Park Task Force

THE REDEVELOPMENT AGENCY OF THE CITY OF SAN JOSE, FRANK FISCALINI (AUGUST 9, 2000)

Response to Comment RASJ-1

If constructed, the Refined Bypass System Alternative would require the proposed recreation trail to cross New Julian Street at grade instead of under New Julian Street Bridge. The Corps and SCVWD believe that recreationists will be able to safely cross New Julian Street because the trail would be routed through the signaled intersection of New Julian Street and North River Street.

The Corps, SCVWD and City of San Jose will continue to coordinate with the Redevelopment Agency of San Jose regarding the design of the trail system.

Winston H. Hickox
Secretary for Environmental Protection

California Regional Water Quality Control Board
San Francisco Bay Region

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Gray Davis
Governor

December 22, 2000

Ms. Nina Bicknese
U.S. Army Corps of Engineers
Sacramento District Planning Division
1325 J. Street
Sacramento, California 95814-2922

Subject: SFRWQCB Comments on *Draft General Re-evaluation and Environmental Report for Proposed Project Modifications, Guadalupe River Project, Downtown San Jose, California.*

Dear Ms. Bicknese:

Staff of the Regional Water Board thank you for the opportunity to comment on your *Draft General Re-evaluation and Environmental Report for Proposed Project Modifications, Guadalupe River Project, Downtown San Jose, California* (Report). In general, we support the Corps in its mission to provide flood protection for Santa Clara residents, and appreciate the Corps' inclusion of stream stewardship in the project design and implementation. Staff have worked with the Guadalupe River Flood Control Project Collaborative (the Collaborative) on flow, temperature, and habitat considerations. We believe the design alternatives in the report sufficiently address those issues and commend your project planners for their efforts.

As you know, the Guadalupe River drains the New Almaden mercury mining district, which was at one time the largest producer of mercury in North America. Mercury is a pollutant that impairs beneficial uses by accumulating to levels in fish that are threatening to human and wildlife consumers. These comments below are intended to help the Project address environmental impacts due to mercury in the design considerations. We are developing a total maximum daily load (TMDL) for mercury in the Guadalupe River and all of San Francisco Bay, which will have significant implications for all construction and maintenance operations in the Guadalupe River and its tributaries. Current regulatory requirements also have important implications for the Project. We hope that you find these comments helpful and look forward to continuing to work with the Army Corps and the Collaborative.

1) Regulatory Framework

The TMDL for mercury in San Francisco Bay will likely be considered by the Regional Board in early 2002. The Guadalupe River mercury TMDL is planned to be considered by the Regional Board in 2004. Until TMDLs are adopted through public process, all of our evaluations and recommendations regarding mercury are based on *existing* water quality objectives, as contained in the 1995 San Francisco Bay Basin Water Quality Control Plan (Basin Plan). We appreciate the RWQCB-1

report's consideration of our proposed TMDL (e.g., Vol. 1, p. 4-27), but when discussing compliance, it is appropriate to refer to the Basin Plan. RWQCB-1

On a practical level, when the TMDL is adopted as policy through public process and in compliance with all statutory requirements, the issues related to mercury will remain the same. This is because the TMDL will steer towards attainment of existing water quality standards. The difference will be that compliance can be evaluated using the tools of mass loading. So it is worthwhile to evaluate masses of mercury involved when removing or immobilizing sediments, as long as it is clear that any direction from the Regional Board is based on our existing regulatory authority, rather than a proposed TMDL. RWQCB-2

2) Water Quality Objectives

There are three relevant objectives that should be considered related to water quality impacts:

i) Our Basin Plan numeric objective for total recoverable mercury in water (0.025 μg/L). The freshwater objective is often cited as 0.012 μg/L, but that number actually appears in a footnote, listed as "desirable." In many of our freshwater NPDES permits, we use the 0.012 value based on Best Professional Judgment. For this analysis, we should just consider the 0.025 μg/L limit.

ii) U.S. EPA's California Toxics Rule numeric criterion for total recoverable mercury in water (0.051 μg/L). This number applies in San Francisco Bay south of the Dumbarton Bridge, which is the receiving water for the Guadalupe River. RWQCB-3

iii) Our Basin Plan narrative objective for bioaccumulation:
"Many pollutants can accumulate on particles, in sediment, or bioaccumulate in fish and other aquatic organisms. Controllable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life. Effects on aquatic organisms, wildlife, and human health will be considered."

Attainment of the first two numeric objectives depends on the amount of suspended sediment present and the mercury concentration of the suspended sediment. Making the reasonable assumption that essentially all of the total recoverable mercury is in the particulate form, we get this relationship: RWQCB-4

1) $[Hg]_{tot} = [TSS] \times [Hg]_{sed} / 1{,}000$

$[Hg]_{tot}$ = total recoverable mercury concentration, (µg mercury / L water)
[TSS] = total suspended sediment (mg sediment / L water)
$[Hg]_{sed}$ = sediment concentration of mercury (µg mercury / g sediment)
1000 = converstion factor for milligrams to grams. RWQCB-4

Equation 1 helps us evaluate the question, "how does mobilization of mercury-laden sediment cause exceedance of numeric objectives?" Table 1 below shows the maximum mercury concentrations in sediment that would attain numeric objectives of 0.025 and 0.051 µg/L for three different levels of suspended sediment. The point of the calculation is that for typical stream and Bay suspended loads, mercury concentrations in sediments greater than 1 µg/g (ppm) will certainly cause exceedance of water quality objectives, and concentrations more like 0.3 µg/g (ppm) are needed to ensure that numeric objectives are attained most of the time.

[Hg]Tot	TSS = 25	TSS = 100	TSS = 200
0.025	1.00	0.25	0.13
0.051	2.04	0.51	0.26

Table 1: Maximum mercury concentrations (µg/g) in sediment required to attain total recoverable mercury concentrations in water of 0.025 µg/L and 0.051 µg/L for TSS levels of 25, 100, and 200 mg/L.

To evaluate water quality impacts related to the proposed Project, we should start with a simple question. How much mercury-laden sediment is currently available to be mobilized from the proposed project area, and how much (or how little) will be mobilized after the Project? There's a connection between mobilization of polluted sediments and exceedance of numeric water quality objectives. The evaluation of environmental impacts must include some assessment of pre- and post- project inputs of highly polluted sediments to the Guadalupe River and Lower South San Francisco Bay. The evaluation also needs to consider mobilization during the 100-year flood event; our current experience of sediment transport is limited to 30-year floods or less. RWQCB-5

As you know, mercury bioaccumulates primarily as methylmercury. The water quality objectives discussed above are based on total mercury, not methylmercury. Therefore, the narrative objective also needs to be considered, because it more directly addresses mercury accumulation in aquatic life.

The key piece of the narrative objective as it relates to declaration of impacts is that the Project (as a controllable water quality factor) "shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life." Mercury concentrations in bottom sediments have already been discussed above.

The question we need to ask related to the narrative is "will the Project result in increased mercury concentrations in aquatic life?" We should recognize up-front that we cannot answer that question definitively with the information we have at hand. Mercury methylation and demethylation is extremely complex. The best we can expect is some reasonable assessment of pre- and post- project methymercury production, and a commitment to monitor methylmercury in water, sediments, and organisms after completion of the Project. So whenever we ask for information about methylmercury, we are addressing our narrative water quality objective for bioaccumulation. RWQCB-6

3) Sediment Cleanup Action Levels

The Project includes a proposed requirement that sediments containing more than 0.1 mg/kg total mercury are not to be reused onsite (Vol. 1 p. 3-37), and cites this as a "goal of the TMDL program for mercury in the San Francisco Bay Region" (Vol. 1 p. 4-27). There are two points we should clarify about this:

i) In the TMDL report we submitted to the U.S. EPA, 0.1 mg/kg is cited as the pre-anthropogenic mercury concentration in sediments, not the proposed target. We proposed a target of 0.4 mg/kg in fine sediments (<63 µm). RWQCB-7

ii) The TMDL is still being debated in a public process, so the final value of the sediment target is still undetermined.

We commend the plan for considering action levels for mercury in sediment. As you can see from Table 1 above, residual mercury in sediments would need to be around 0.1 mg/kg or less to ensure that numeric water quality objectives are met everywhere all the time. However, it should be recognized that prohibiting reuse of sediments containing more than 0.1 mg/kg mercury, may effectively prohibit reuse of all sediments. Essentially all of the sediment moved in that watershed will be above 0.1 mg/kg. So, referring back to our narrative objective for bioaccumulation, we need to agree on a cleanup level for sediments that represents a *controllable* water quality factor.

Another related question is whether the sediment reuse prohibition means removing sediments from the watershed, presumably to a Class 1 landfill, or whether it is acceptable to dispose sediments deemed unfit for reuse at another approved disposal site, such as a local Class 2 or Class 3 landfill. Clearly, sediments with mercury levels exceeding human health hazard levels (e.g., > 20 ppm) will have to be disposed as hazardous waste in a Class 1 landfill. But will it be necessary to take sediments with less than 20 ppm mecury to a Class 1 landfill outside the watershed? RWQCB-8

We discussed this issue in a teleconference on August 16, 2000 with your staff, staff of the Santa Clara Valley Water District (SCVWD), staff of the United States Fish and Wildlife Services (USFWS), and the California Department of Fish and Game (CDFG). From the above considerations and that August 16 discussion, we recommend the following modification to the soil reuse plan:

i) Sediments with mercury concentrations >20 ppm must be disposed of in a Class 1 landfill.

ii) Sediments with mercury concentrations between 1 and 20 ppm may be disposed of in a suitable Class 2 or Class 3 landfill. Project managers will have to coordinate with landfill operators to determine if they will accept the sediments. The Regional Board also has permitting authority over landfills. We are available to discuss the overall water quality implications of landfill disposal.

iii) Onsite soil reuse and overexcavation should be done in a manner consistent with the Guadalupe Creek Restoration Project Soil Management Plan (attached).

RWQCB-9

The issue of landfill disposal of polluted sediments has long-term implications for watershed management. In the proposed TMDL, we argue for recycling of mercury-containing fluorescent lights, which could prevent up to 250 kg mercury per year from entering local landfills. At the same time, we are currently guiding the Army Corps to dispose potentially thousands of kilograms of mercury in local landfill through soil and sediment removal.

The explanation for this apparent contradiction is in the chemical form of mercury. Mercury in fluorescent lights is primarily elemental, which vaporizes readily. So we consider improper disposal of fluorescent lights to be a diffuse air source, and recycling to be the best way of reducing risk from this source. In our best professional judgment, mercury in sediments is much less volatile than mercury in fluorescent lights. The environmental risk from mercury-laden sediments from the Guadalupe River watershed is due to transport into Lower South Bay, where conditions may favor methylation. Removing polluted sediments from the aquatic ecosystem reduces this environmental risk. This is the best guidance we can offer given the available information. Our agency will need to investigate this question in greater detail as we proceed with TMDL development.

RWQCB-10

4) *General Guidance for Project Design to Minimize Mercury Impacts*

From the above discussion, we can offer five general guidelines that we will use to evaluate the Project with respect to mercury contamination:

i) Measure mercury and methylmercury concentrations in soils ahead of time. The plan calls for measurement every 2500 cubic yards, which is acceptable. RWQCB-11

ii) Move as much polluted soil as possible out of the aquatic ecosystem. As discussed above, we need to resolve action levels and disposal practices, but we can offer some interim guidance.

iii) Maximize erosion control, both during project implementation and after project completion. Accepting that it's impractical move every cubic yard of mercury- polluted soil out of the watershed, ensure that soils left on the ground stay out of the aquatic ecosystem. We encourage preventative, proactive measures over addition of more hardscape. Such measures include revegetation and identifying and correcting potential instabilities through adaptive management.

iv) Minimize the potential for mercury methylation in the Project's design. Mercury is methylated by sulfate reducing bacteria, which favor anoxic and suboxic wetlands and marshes. In the design, stagnant pools and wetlands should be avoided.

v) Monitor post-project to verify that design goals with respect to erosion control and mercury methylation were achieved, and modify as appropriate.

RWQCB-11

5) *Mercury loads involved*

It will be helpful to quantify the mercury involved, even though we are not, at present, regulating under a TMDL policy. Table 2 below quantifies the masses of mercury associated with various sediment volumes and mercury concentrations. These masses are significant. To put them into perspective, annual loads of mercury in wastewater total between 20 and 50 kg per year in all of San Francisco Bay. The Project has the potential to make a tremendous impact on the annual mass loading of mercury to San Francisco Bay.

RWQCB-12

	Cubic yards of sediment		
Average Concentration, ppm	10,000	50,000	100,000
1	15	76	153
10	153	765	1529
20	306	1529	3058
50	765	3823	7645

Table 2: Mercury masses (kg) associated with mercury concentration and volume of sediment removed or immobilized.

6) *"No Action" alternative*

Regarding your "no-action" alternative, it should be highlighted that under this option we would miss an opportunity to make significant progress towards remediating a polluted watershed. RWQCB-13

Conversely, under all of your other project alternatives, the Regional Board would have opportunities through its ability to issue 401 Certifications and Waste Discharge Requirements to oversee appropriate monitoring and cleanup actions that can make substantial near-term progress towards attaining water quality standards. RWQCB-13

7) Seek opportunities to trap and remove mercury-polluted sediments before they enter Lower South Bay.

The principal source of mercury in the Guadalupe River watershed is the New Alamaden mining district. Through implementation of the Guadalupe River TMDL, we will propose actions that will reduce or eliminate ongoing loads to the Guadalupe River from upland pollution, but the entire stream system below the watershed has been polluted as well. We also would like the Corps to consider whether any of the proposed design alternatives could allow a trapping zone, where mercury polluted sediments can be removed before they enter Lower South Bay. As part of this project, We would like to know if such a trapping zone is feasible, and whether it would result in a net environmental benefit. Likewise, are there other measures that can be incorporated into the Project, possibly in conjunction with SCVWD, the Santa Clara Urban Runoff Pollution Prevention Program, and/or any of that Program's members? RWQCB-14

The Project Effects section (4.8.1) states that over 90 percent of the bottom load will be deposited between Trimble Road and Montegue Expressway, and that this reach will be periodically dredged by the SCVWD to maintain the channel. In the adaptive management of this project, we should determine how much mercury that regular dredging would remove, how much mercury would still be conveyed to Lower South Bay, and what is the chemical form and fate of that mercury that does make it into Lower South Bay. RWQCB-15

8) Attraction of anadromous fish into mercury contaminated waterways

Stakeholders have raised the concern that some aspects of the Project, such as the upper Guadalupe Creek mitigation, will have the effect of attracting fish into mercury contaminated regions. We agree that we need to work closely with the other resource agencies (United States Fish and Wildlife Services, National Marine Fisheries Services, California Department of Fish and Game) to assess environmental impacts from this process.

RWQCB-16

Our position is that the habitat restoration aspects of this project simply highlight the requirement which already exists under the Clean Water Act to clean up mercury pollution. We would not want to see stream restoration inhibited because the watershed is polluted. Full restoration of beneficial uses in the Guadalupe River watershed is a long term project. Both aspects, cleanup and habitat restoration, need to proceed in tandem.

9) Monitoring methods

Your monitoring methods present a good general framework for adaptive management. We suggest you also consider determining the chemical form of mercury in porewater, which is relevant to both direct toxicity and mercury bioavailability. To evaluate the potential for methylation, we would like to see a suite of redox indicators. Some good candidates are nitrogen species (ammonia, nitrite, nitrate), dissolved manganese, sulfides, and dissolved oxygen. RWQCB-17

10) Track additional costs related to mercury

Additional monitoring, project design, and remediation actions incur additional costs. The proposed mercury TMDL, if adopted, will require significant commitments from SCVWD and its partners to continue monitoring and remediation activities. State law requires that any policy change takes into account economic impacts. We would appreciate it if your staff can track additional costs incurred relative to meeting existing regulatory requirements, including monitoring, soil re-use and disposal, and modeling. That information will help us present to the public a credible assessment of the total cost of controlling mercury inputs from the Guadalupe River watershed into San Francisco Bay. RWQCB-18

11) General comments from hydromodification staff (Jill Marshall)

The Corps, SCVWD and JSA have gathered a large amount of data in the development of the Project. Some of the information on hydraulics, sediment transport and pre-project and post-project conditions gathered throughout the Project's design phases might contain information that can help reduce mercury loading to the Bay, especially relative to mercury source areas. While the Environmental Report does not contain this information, Board staff could make recommendations on reevaluating some potentially available data that would aid in future decision making. Thus, the following questions are intended to gauge what data potentially already exists. Most of these questions can be readily answered as either "yes, the data exist" or "no, additional studies would be required to address that."

The table below illustrates some source areas of mercury in the Guadalupe River system, and some different mechanisms to consider when evaluating the potential for mercury bioavailability.

Sources	Supply	Storage and Exchange	Transport
New Almaden Mine	x		x
Channel Bed	x	x	x
Channel Banks	x	x	
Floodplain	Under some conditions	x	

i) **Potential Data Tools**: Is there existing information on sediment transport (i.e., sediment rating curves, predictive sediment transport models, channel depositional and scour rates, information on bed material, floodplain soils and measured wash loads) that could provide information on potential mercury-laden sediment storage areas? Can current floodplain elevations be compared to known floodplain elevations taken from the as-builts and used to establish deposition rates in the floodplain? Is it possible to combine depositional rate information, spatial variations in particle size distribution in the floodplain and recent hydrologic data to target certain depositional areas as likely sources of mercury? RWQCB-19

ii) **River Management and Maintenance Opportunities**: Identification and removal of sediment sources upstream of the West Santa Clara Bypass Channel could be an opportunity to reduce a greater percentage of mercury-laden sediments before it they mix with sediment from the Los Gatos Creek drainage. Are there depositional features upstream of the Guadalupe-Los Gatos confluence that could be "mined" for mercury-laden silts and clays? Are there areas that should be managed to minimize anaerobic soil conditions? Flood control maintenance efforts should focus on excessive sedimentation prevention in the least environmentally damaging manner. For example, the operations and maintenance agreement might include revegetating floodplains following large sediment deposits to prevent sediment remobilization. RWQCB-20

12) Summary of Regional Board comments

In summary, these comments present a great deal of information intended to help guide the Project's design and the evaluation of its environmental impacts due to mercury. The comments do not require substantial changes to the Environmental Report. The main areas that need to be changed are:

i) References to the proposed TMDL. Refer to the existing Basin Plan requirements. It is fine to consider the TMDL, but it should be clear that the Project is not required to comply with a proposed policy;
ii) Modify the soil reuse plan as discussed under comment (3);
iii) Include discussion of mercury monitoring and cleanup opportunities for the Regional Board in your assessment of the "no action" and "proposed alternatives"; RWQCB-21
iv) Add porewater and redox indicators to the mercury monitoring section (4.8.3.1); and
v) Consider or address questions in hydromodification under comment (11).

We hope you find these comments constructive and helpful, and look forward to working with you more on this complex issue. If you have any questions, please contact Dr. Khalil E. Abu-Saba at 510-622-2382, or abu@rb2.swrcb.ca.gov.

Sincerely,

Bruce H. Wolfe

Bruce H. Wolfe
Chief, Watershed Protection Division

Cc: David Chesterman, SCVWD

Attachments: Comments on SCVWD Soil Management Plan for Guadalupe Creek (3 pp.)

Comments on Soil Management Plan
Proposed by the Santa Clara Valley Water District

Khalil Abu-Saba
San Francisco Bay Regional Water Quality Control Board

11-14-00

The Santa Clara Valley Water District (SCVWD) must excavate, move and replace soils and stream sediments to complete projects for flood control, stream restoration, and watershed stewardship. The Guadalupe River watershed has been severely impacted by mercury contamination from the New Almaden mine, which was at one time the largest producer of mercury in North America. Soils and sediments in the upper watershed, streams, and floodplain have mercury levels high enough to cause violations of water quality objectives. Recent monitoring by the Water District suggests that the mercury in those soils and sediments is available for methylation and bioaccumulation, potentially threatening the health of human and wildlife fish consumers. RWQCB-22

The proposed soil management plan (SMP) addresses the complex problem of terraforming in a mercury-polluted landscape. The intent is to ensure that projects improve conditions with respect to downstream transport and methylation of mercury. The SMP is proposed for the Guadalupe Creek restoration project, which is to begin in the spring of 2001. The Guadalupe creek SMP should be consistent with that of the Lower Guadalupe River flood control project, also scheduled to begin in 2001.

We agree with the overall approach stated in the SMP (Figure 1 and Figure 2). If implemented as proposed, the projects should result in improvements to water quality with respect to mercury transport and bioaccumulation. Our only comments are:

1) We suggest defining the active channel using the three-year event elevation, rather than the two-year event. A slightly higher elevation improves the chances for revegatation and stabilization of the emplaced soils. For now, it is not appropriate to require even higher elevations for placing soils that are above 1 ppm, as erosional processes in the upper watershed will continue to deposit mercury polluted sediments along the banks downstream during flood events. RWQCB-23

2) In future projects, as we get more control over release of polluted sediments from the watershed, we will ask for soil management plans to move mercury-polluted sediments to even higher elevations, such as the ten or twenty year event.

We thank the staff of the SCVWD for the opportunity to comment on the SMP, and look forward to a continued partnership in the challenge of watershed rehabilitation.

Soil Management Plan for Guadalupe Creek Proposed by SCVWD

The Soil Management Plan (SMP) includes protocols for classifying the content of wastes in soil based on standard analytical tests used for the disposal of material at appropriately licensed disposal sites (CH2MHill 1994). The soil management plan also provides criteria for classification of material considered inert based on California's standard waste extraction test procedures, as well as procedures for disposal and reuse of these materials. At an appropriate time prior to disposal, confirmation sampling for all constituents of concern, including metals, hydrocarbons, and polynuclear aromatic hydrocarbons will be conducted and the soil classified pursuant to the criteria outlined in the approved SMP. RWQCB-24

Prior to project implementation, the Soil Management Plan will be updated to reflect final project design and to incorporate input from the Regional Water Quality Control Board (RWQCB) regarding management of soils containing elevated mercury concentrations. The updated Soil Management Plan will be submitted to the RWQCB for approval prior to implementation.

The following additional restrictions on soil management will be included in the SMP:

Excavated soils with mercury concentrations not exceeding hazardous waste criteria but greater than 1 part per million (ppm) may not be reused on site unless such sediments are placed above the low flow channel or in adjacent areas where frequent exposure to overbank flow is not anticipated to occur(i.e; above the water surface elevation defined by the 3-year recurrence interval or as backfill away from the channel).

Excavated surfaces above the 3-year recurrence interval elevation which contain mercury concentrations higher than hazardous waste levels will be overexcavated and replaced with soils meeting the above criteria for on-site reuse. Excavated surfaces below the 2-year recurrence interval elevation which contain mercury concentrations greater than 1 ppm will be overexcavated and replaced with clean imported soil. The 1 ppm requirement is based on regulatory guidance from the RWQCB (Aug 2000) which states that reducing bank sediment concentrations of mercury to 1 ppm or less will reduce water column concentration of total recoverable mercury. Water quality in the project area presently exceeds Basin Plan numeric water quality objectives for mercury. Therefore, incorporation of the proposed soil reuse restrictions will result in improved water quality under post project conditions. RWQCB-25

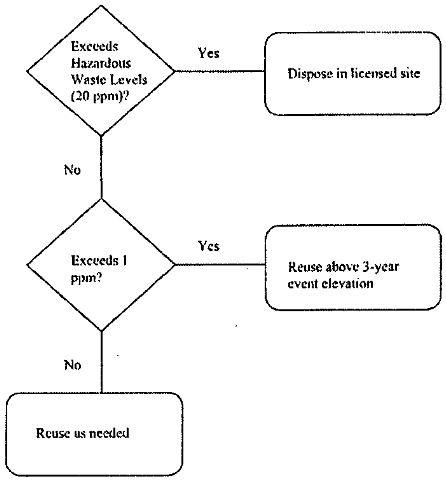

Figure 1: Decision tree for onsite soil reuse and disposal based on soil mercury concentrations.

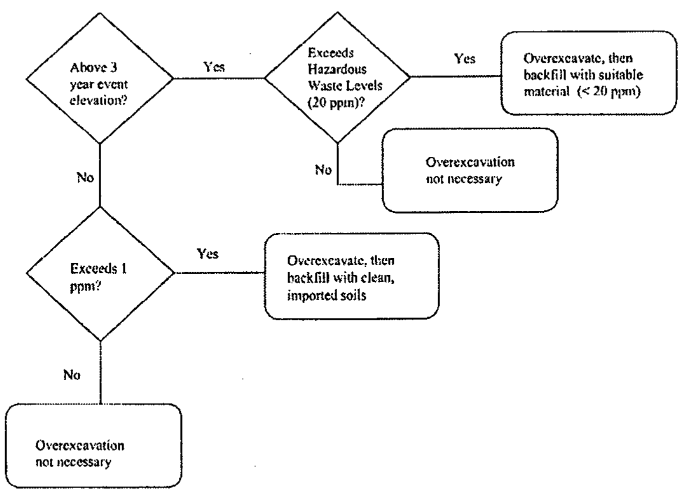

Figure 2 : Decision tree for overexcavation and backfilling based on soil mercury concentrations.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, KHALIL E. ABU-SABA (AUGUST 9, 2000)

Response to Comment RWQCB-1

The Corps and SCVWD acknowledge the significance of the RWQCB's TMDL efforts, specifically mercury and its potential impacts on San Francisco Bay. It is understood that the TMDL is currently a draft policy. However, the movement toward watershed-based water quality management is germane, particularly to establishing the affected environment for environmental review. It is recognized that the Basin Plan constitutes the existing enforceable regulations and forms the basis for determining the significance of impacts. Therefore, the environmental document established that an impact would be considered significant if it would "violate any water quality standards or waste discharge requirements" (Volume 1, page 5-17).

Response to Comment RWQCB-2

The technique of regulating mercury and other such compounds on a mass loading basis, which relates specifically to a watershed management-based approach to maintaining water quality, is acknowledged. Please see Response to Comment RWQCB-1.

Response to Comment RWQCB-3

These numeric and narrative objectives are found in the San Francisco Bay Basin Plan and apply to the proposed project as water quality guidelines (Section 5.3, "Water Quality"). The importance of these objectives is acknowledged, and the Corps and SCVWD will strive to avoid violating these guidelines during all phases of the project.

Response to Comment RWQCB-4

The comment suggests a linear empirical relationship between recoverable mercury and suspended sediment concentrations in water, in that essentially all mercury present in the system is adsorbed to sediment particles, and that no significant fraction is found dissolved within the water column. The equation may be a valid characterization of mercury behavior in the environment, but it does not consider the bioavailability or potential toxicity of mercury in the aqueous phase. Furthermore, the relationship assumes that the entire load of suspended sediment in the river is derived from mercury-laden deposits on a continuous basis. In reality, the concentrations of mercury in the sediment vary in different areas and from different tributary inputs of the Guadalupe River. Nevertheless, applying this linear relationship, sediment concentrations would correlate directly to suspended sediment concentrations, which implies that the mercury numeric objective of 0.025 μg/L is

periodically exceeded in the Guadalupe River, particularly during high-flow events, which generate high total suspended solid concentrations.

As presented in Response to Comment EPA-10, Guadalupe River channel sediments average 4.2 µg/g of mercury, wet weight. Using the equation presented and solving for total suspended solids, a suspended solids concentration of greater than 6 mg/l would result in a Basin Plan numeric objective violation for mercury in freshwater. Although total suspended solids data has not been historically collected on the Guadalupe River, the total suspended solids level undoubtedly exceeds 6 mg/L during high wet weather flows. As suggested in the comment, and presented here, the water-quality objective for mercury is currently exceeded. Therefore the baseline of the water-quality analysis is one where the water-quality objective is periodically exceeded.

Response to Comment RWQCB-5

The relationship between mobilization of mercury-laden sediment and exceedance of water quality objectives for mercury is acknowledged. The Corps and SCVWD do not have quantitative data on the amount of mercury-laden sediment currently available to be mobilized from the Guadalupe River basin. As discussed in Response EPA-4 and in Section 5.3.3.3, "Toxic Constituents – Mercury," the Guadalupe River Project includes commitments and design elements that would minimize mercury loading to the San Francisco Bay and methyl mercury formation. These commitments and design elements include erosion and sediment control during construction and operation, a soil management plan, channel armoring, and riparian vegetation planting.

The Guadalupe River Project, Upper Guadalupe River Flood Control Project, and Lower Guadalupe River Flood Protection Project are all designed to convey the design floodflows and maintain bed and bank stability. Consequently, the potential for mobilization of mercury-laden upper bank materials should be reduced because banks will be stabilized, sediments will be removed, and bank armoring will be constructed. Implementing the flood control projects should therefore reduce the mercury loading of San Francisco Bay. See Section 6.4.2.3, "Toxic Constituents – Mercury."

The Guadalupe Creek Restoration Project will modify the existing low flow channel and floodplain terrace. As currently planned, the restoration project would not substantially alter the size of the floodplain, although construction of the project would require removal of soils potentially laden with mercury from the floodplain terrace. Because the increased channel roughness caused by the increased vegetation density is offset by increased channel cross-sectional area, Guadalupe Creek would convey the same floodflow at a lesser velocity. Removing mercury-laden soils in combination with decreasing floodflow velocity would reduce the potential for mobilization of sediments that could otherwise enter San Francisco Bay.

Response to Comment RWQCB-6

Increased concentrations of mercury in aquatic life as represented by bioavailability and bioaccumulation, were considered a potentially significant cumulative impact, as discussed in Section 6.2.4.3, "Toxic Constituents – Mercury." That discussion acknowledged that the issue of mercury methylation contamination and its accumulation in aquatic life could not be rigorously answered with the information at hand. The cumulative analysis discussion regarding mercury states that "projects in the Guadalupe River watershed that contribute to changes in sediment deposition could contribute to a cumulative impact involving changes in the locations and rates of methyl mercury formation" (Chapter 6, "Cumulative Impacts and Other Required Analyses"). Mitigation was proposed and is described on page 6-27 of the Draft EIR/SEIS.

Response to Comment RWQCB-7

Please see Response to Comment RWQCB-9 regarding the process of establishing mercury sediment guidelines specifying disposal, reuse, and other requirements before and during project construction and operation. The 0.1 mg/kg Hg is below the range of background levels shown by several surveys (see Response to Comment EPA-10).

Response to Comment RWQCB-8

The soil management plan outlines soil management and disposal criteria, including the classification of soils as hazardous and nonhazardous waste. Based on confirmatory sampling to be conducted at the time of construction, soils will be classified for disposal and a determination of what landfill may receive the waste will be made. As mitigation for mercury concerns in the Draft EIR/SEIS, a modification of the soil management plan was specified, whereby a mercury disposal and reuse threshold was established to ensure that wastes determined to be nonhazardous, as defined in hazardous waste regulations, would not be reused onsite if mercury concentrations exceeded the specified threshold. This additional precaution regarding mercury was established to meet the RWQCB's Basin Plan water quality objectives and the proposed mercury TMDL for San Francisco Bay. Moreover, the Corps and SCVWD acknowledge that construction is the most effective time for removing mercury from the Guadalupe River.

As discussed in Response to Comment EPA-6, it is estimated that the Bypass System Alternative alone could remove as much as 350 pounds (145 kilograms) of mercury (approximately 30,000 cubic yards of soil with an average mercury concentration of 4.2 mg/kg) from the Guadalupe system associated with in-channel excavation. The environmental consequences discussion in Section 5.3.3.3, "Toxic Constituents – Mercury", as modified in Response to Comment EPA-8 and EPA-9, includes a discussion of this potential benefit of mercury removal.

Response to Comment RWQCB-9

The following changes are made to the Draft EIR/SEIS and Appendix 3:

Page 3-36 beginning with the heading "Soil Management Plan," and Appendix 3, page 2-25.

> ***Soil Management Plan.*** The soil management plan includes protocols for classifying the content of wastes in soil. These protocols are based on standard analytical tests used for the disposal of material at ~~landfills (CH2M HILL, 1999)~~ appropriately licensed disposal sites (CH2MHILL, 1994). The soil management plan also provides criteria for classification of material considered inert, based on California's standard ~~waste extraction test procedures,~~ Waste Extraction Test (WET) procedures, as well as procedures for disposal and reuse of these materials. ~~Additionally, the following measures would be implemented:~~ Prior to disposal, confirmation sampling for all constituents of concern, including metals, hydrocarbons, and polynuclear aromatic hydrocarbons, will be conducted and the soil classified pursuant to the criteria outlined in the approved soil management plan.
>
> Prior to project implementation, the soil management plan will be updated to reflect final project design and to incorporate input from RWQCB regarding management of soils containing elevated mercury concentrations. The updated soil management plan will be submitted to RWQCB for approval prior to implementation.
>
> The following additional restrictions on soil management would be included in the soil management plan submitted to RWQCB for their approval:
>
> - Sediments with mercury concentrations that exceed hazardous waste criteria under Federal or State law must be disposed offsite in appropriately licensed disposal sites. The determination of hazardous properties shall comply with all applicable statutes and regulations pertaining to hazardous wastes.
> - Excavated soils with mercury concentrations not exceeding hazardous waste criteria but greater than 1 mg/kg may not be reused onsite unless such soils are placed above the low flow channel or in adjacent areas where frequent exposure to overbank flow is not anticipated to occur; above the water surface elevation defined by the 3-year recurrence interval.
> - Excavated surfaces above the 3-year recurrence interval elevation that contain mercury concentrations higher than hazardous waste levels will be overexcavated and replaced with soils meeting the above criteria for onsite reuse. Excavated surfaces below the 3-year recurrence interval elevation which contain mercury concentrations greater than 1 mg/kg will be overexcavated and replaced with clean imported soil.
> - The limitations on onsite reuse of excavated soils and sediments would also apply to operation and maintenance activities throughout the life of the proposed project.

The 1 mg/kg requirement is based on regulatory guidance from RWQCB (California Regional Water Quality Control Board, 2000) which states that reducing bank sediment concentrations of mercury to 1 mg/kg or less will reduce water column concentration of total recoverable mercury. Water quality in the project area presently exceeds Basin Plan numeric water quality objectives for mercury. Therefore, incorporation of the proposed soil reuse restrictions will result in improved water quality under postproject conditions.

- ~~Material grubbed, scraped, and excavated from the channel bed and banks shall be randomly sampled for total mercury and methyl mercury concentrations at a rate of one sample for every 2,500 cubic yards of material removed.~~
- ~~Construction and maintenance specifications shall include a requirement that material grubbed, scraped, and excavated from channel bed and banks is not to be reused onsite unless it can be demonstrated to contain less than 0.1 mg/kg total mercury. If soil is to be disposed of offsite, the material shall be hauled to an accepting location or facility.~~
- ~~Material grubbed, scraped, and excavated from the channel bed and banks shall be randomly sampled for total mercury and methyl mercury concentrations at a rate of one sample for every 2,500 cubic yards of material removed. A minimum of two samples shall be taken for any increment of material less than 2,500 cubic yards.~~
- ~~Sampling protocol shall be developed in coordination with the San Francisco Bay RWQCB. Sampling shall be performed in such a manner that each sample represents the entire volume of material in the sampled excavation increment. Sampling technique, sample locations, and the total volume of material removed shall be documented. Values shall be reported as wet weight with percent moisture content specified.~~

~~Implementation of these measures would ensure that material excavated under the Proposed Action that contains less than 0.1 mg/kg total mercury is disposed of or reused in a beneficial way. These measures will ensure that material contaminated with mercury is not eventually transported back into the Guadalupe River system or into San Francisco Bay and will provide a means of quantifying the amount of mercury removed.~~

Response to Comment RWQCB-10

The Corps and SCVWD agree that mercury in the sediments of the Guadalupe River is not in a volatile form, and therefore would not be expected to volatilize into the atmosphere. The majority of mercury occurs as cinnabar (mercuric sulfide), which is relatively nonvolatile and water insoluble. Several sediment samples from the project area were subjected to the Waste Extraction Test (WET), an analytical procedure to evaluate the propensity of wastes to leach from soils (CH2M HILL, 1995, CH2M HILL, 1994). Results of

these tests for mercury suggested that mercury in Guadalupe River sediments is relatively insoluble and would not present a significant leaching hazard under simulated landfill conditions.

Response to Comment RWQCB-11

As indicated in Response to Comment RWQCB-9, excavated soils with mercury concentrations not exceeding hazardous waste criteria but greater than 1 mg/kg may not be reused on site unless such soils are placed above the low flow channel or in adjacent areas where frequent exposure to overbank flow is not anticipated to occur; above the water surface elevation defined by the 3-year recurrence interval. Excavated surfaces above the 3-year recurrence interval elevation that contain mercury concentrations higher than hazardous waste levels will be overexcavated and replaced with soils meeting the above criteria for onsite reuse. Excavated surfaces below the 3-year recurrence interval elevation which contain mercury concentrations greater than 1 mg/kg will be overexcavated and replaced with clean imported soil. Excavated soil would be disposed of offsite at a approved disposal facility if it contained greater than 1 mg/kg of total mercury, and it would be disposed of at a hazardous materials disposal facility if it contained mercury levels exceeding hazardous waste criteria.

A stated objective of the proposed project is to "reduce erosion of the riverbed and banks to preserve existing habitat" to the maximum extent practicable in consideration of other project objectives such as placing special emphasis on using opportunities presented during construction to avoid potential impacts on fish and wildlife (Section S.1.4). To prevent or avoid erosion and bank instability, considerable emphasis has been placed on project design to identify areas of existing erosion problems as well as areas that may develop erosional problems after project implementation.

Furthermore, a comprehensive erosion control and monitoring program has been developed as a management tool should significant unanticipated erosion and bank instability occur during project design (see the Mitigation and Monitoring Plan, Volume 2, Appendix 3). Adaptive management and avoidance of armor, where possible, are key elements of the MMP and project design.

The project design minimizes the formation of stagnant pools by creating a better defined low flow channel that will concentrate flows and reduce the potential for anoxic or stagnant conditions. Many features have been included to make the project reach more hospitable to anadromous fish passage, including the maintenance of dissolved oxygen concentrations and cool water temperatures. In addition, as discussed in Response to Comment RWQCB-6 and Section 6.2.4.3, "Toxic Constituents – Mercury," SCVWD will participate with the RWQCB in monitoring mercury transport and mercury methylation postproject for a period of at least one year.

Response to Comment RWQCB-12

Please see Response to Comment RWQCB-8.

Response to Comment RWQCB-13

The Corps and SCVWD are committed to cooperating with the RWQCB and other agencies in providing mercury remediation, concurrent with flood protection, on the Guadalupe River. Project completion is expected to result in net improvements in water quality, fish and wildlife habitat, and potentially reduced exposure of humans and wildlife to mercury. SCVWD has also committed to full participation in the TMDL process (Section 6.2.4.3, "Toxic Constituents – Mercury").

Response to Comment RWQCB-14

Future opportunities to capture and remove sediments containing mercury from the Guadalupe River watershed will be addressed by SCVWD through the TMDL (Section 4.3, "Water Quality"). The TMDL process will determine if the construction and operation of sediment traps throughout the watershed will help meet the goal of a 92 percent reduction in the amount of mercury entering the Bay from the Guadalupe River. A potential site that could be evaluated by the TMDL for use as a sediment trap is the floodplain terrace in Segments 1 and 2. However, evaluating the feasibility of that site for trapping sediment was beyond the scope of this flood protection project. However, this does not preclude modifications to project features through separate programs that are addressing the mercury issue in the Guadalupe River watershed. The SCVWD has committed to continued coordination with programs that are currently addressing the potential for trapping and removing mercury-polluted sediments from the Guadalupe River watershed. These programs include, but are not limited to, FAHCE, the Santa Clara Urban Runoff Pollution Prevention Program, and the TMDL program.

Response to Comment RWQCB-15

The reach of the river between Trimble Road and Montague Expressway is being evaluated in the Lower Guadalupe River Flood Protection Project EIR/EIS (in preparation). The EIR/EIS will evaluate sediment deposition and removal for that reach of the river and is expected to address the technical issues raised in the comment.

Response to Comment RWQCB-16

Please see Responses to Comments PIZZO-2 and EPA-5, which stress the dual objectives of the Guadalupe River Project with Bypass System Alternative.

Response to Comment RWQCB-17

Please see Responses to Comments EPA-8 and EPA-9. The cumulative impact analysis contained in Section 6.2.4.3, "Toxic Constituents – Mercury," has been modified and reflects SCVWD's intention to coordinate with RWQCB regarding monitoring methods for the proposed watershed monitoring program.

Response to Comment RWQCB-18

SCVWD will track costs incurred to meet existing regulatory requirements.

Response to Comment RWQCB-19

There are limited data on sediment transport in the Guadalupe River. As described in Section 4.2, "River Geomorphology," the Corps prepared a sediment transport analysis that is part of the General Design Memorandum. This analysis predicted sediment loads in response to various return interval storms based on data from similar watersheds in the region and a limited amount of measured data from the Guadalupe River. Detailed movable bed sediment transport models have not been completed.

Because the Guadalupe River is deeply incised from its origin at the Almaden Drop Structure to I-280, there is essentially no floodplain. Based on stream surveys completed for fish passage analyses, there are very limited areas of deposition and much of the channel is downcutting. The Corps and SCVWD do not believe that there are significant fine sediment sinks in the river upstream from I-280. The channel improvements made in Segments 1 and 2 are the only potential deposition areas for fines in the downtown area.

The General Design Memorandum analysis was revised for the Bypass System Alternative (Northwest Hydraulic Consultants, 1999) and for the Lower Guadalupe River Flood Protection Project (Northwest Hydraulic Consultants, 2000). Both of these studies indicate that fine materials that likely contain mercury accumulate in the lower portions of the river between Trimble Road and Montague Expressway.

As-built drawings from the 1980s for the lower Guadalupe River can be compared with current survey data collected for the Lower Guadalupe River Flood Protection Project to estimate the rate of sediment accumulation in that area.

See Response to Comment EPA-4.

Response to Comment RWQCB-20

Trapping sediments upstream from Los Gatos Creek would be advantageous to minimize the quantity of material that would be have to be disposed of at a hazardous materials landfill. Locations of substantial accumulations of fines upstream from the confluence with Los Gatos Creek that could be mined from the river channel have not been identified. However, one area that could be considered is immediately upstream from the Almaden Drop Structure where Guadalupe Creek enters Almaden Lake. See Response to Comment EPA-4.

Large accumulations of sediments that occur as the result of a flood in the project area will be removed from the channel to restore the flood-control capacity of the channel.

Response to Comment RWQCB-21

Please refer to Responses to Comments RWQCB-1, RWQCB-2, RWQCB-3, RWQCB-7, RWQCB-9, RWQCB-11, RWQCB-16, RWQCB-17, RWQCB-19, and RWQCB-20.

Response to Comment RWQCB-22

Comment noted.

Response to Comment RWQCB-23

The text in Chapter 3 has been modified to reflect this comment. Please see Response to Comment RWQCB-9.

Response to Comment RWQCB-24

The text in Chapter 3 has been modified to reflect this comment. Please see Response to Comment RWQCB-9.

Response to Comment RWQCB-25

The text in Chapter 3 has been modified to reflect this comment. Please see Response to Comment RWQCB-9.

Response to Comment RWQCB-26

The text in Chapter 3 has been modified to reflect this comment. Please see Response to Comment RWQCB-9.

THE CITY OF SANTA CLARA
CALIFORNIA

ENGINEERING DEPARTMENT
CITY HALL
1500 WARBURTON AVE.
SANTA CLARA, CA 95050
(408) 615-3000
FAX (408) 985-7936

July 28, 2000

Ms. Nina Bicknese
Biological Services Environmental Manager
U.S. Army Corps of Engineers
1325 J Street
Sacramento, CA 95814-2922

Re: Guadalupe River Project—Draft General Re-Evaluation Report/Environmental Impact Report and Supplemental Environmental Impact Statement for Proposed Modifications

Dear Ms. Bicknese:

Thank you for the opportunity to review the above referenced documents.

One of the City's main concerns is the increased susceptibility for flooding due to the Guadalupe River Project improvements. It is crucial for the City of Santa Clara to have the improvements to the Lower Guadalupe River Project completed prior to or concurrently with the Guadalupe River Project. The 100-year flood protection provided by the Guadalupe River must extend to the San Francisco Bay. SC-1

If you have any questions or need more information regarding this matter, please call me at (408) 615-3011.

Sincerely,

Gustavo Gomez
Gustavo Gomez
Principal Engineer—Design Division

cc: Bruce C. Augason
Kevin Riley

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THE CITY OF SANTA CLARA CALIFORNIA, ENGINEERING DEPARTMENT, GUSTAVO GOMEZ (JULY 28, 2000)

Response to Comment SC-1

SCVWD is committed to completing the Lower Guadalupe River Flood Protection Project as expeditiously as possible. Currently, the Lower Guadalupe River Flood Protection Project is scheduled for completion before or, concurrent with the Guadalupe River Project with Bypass System Alternative. In addition, the Corps and SCVWD have indicated that the Guadalupe River Project with Bypass System Alternative will not be made operational until the Lower Guadalupe River Flood Protection Project has been completed (Draft EIR/SEIS; Section 6.2.1.8, "Lower Guadalupe River Flood Protection Project").

Santa Clara Valley Water District

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www.scvwd.dst.ca.us
AN EQUAL OPPORTUNITY EMPLOYER

August 9, 2000

Ms. Nina Bicknese
Environmental Compliance Manager
U.S. Army Corps of Engineers
Sacramento District
1325 J Street
Sacramento, CA 95814-2928

Dear Ms. Bicknese:

Subject: Guadalupe River Downtown Flood Control Project—Comments on Draft General Reevaluation Report/Environmental Impact Report/Supplemental Environmental Impact Statement; File Nos. 3015-13, -14, -15, -16, and -17

The Santa Clara Valley Water District (District) would like to take this opportunity to thank the U.S. Army Corps of Engineers (Corps) and their various consultants for their efforts to date on the preparation of the Draft General Reevaluation Report/Environmental Impact Report/Supplemental Environmental Impact Statement (GRR) for the Guadalupe River Downtown Flood Control Project (Project). The Corps' continued support and diligent work on this Project is appreciated.

The GRR is consistent with the District's standards and goals of constructing a project that is in the public's best interest by providing 100-year flood protection, protecting important environmental qualities of a waterway, expanding on-site and off-site mitigation, and enhancing recreational opportunities. I believe the high level of involvement by the resource agencies and outreach efforts to key stakeholders over the last several months has resulted in project modifications that greatly improves the project's overall benefit to the community. SCVWD-1

Thanks again for all your efforts to date. The District and our local partners, the City of San Jose, and the Redevelopment Agency of San Jose, are eager to continue our joint efforts to finally complete this vital flood control project in downtown San Jose.

Sincerely,

for David J. Chesterman
Guadalupe Watershed Manager

cc: Mr. Brandon Muncy
Senior Project Manager
U.S. Army Corps of Engineers
1325 J Street
Sacramento, CA 95184-2928

Mr. Dave Ruark, P.E.
Project Manager
U.S. Army Corps of Engineers
1325 J Street
Sacramento, CA 95184-2928

Mr. Harry Mavrogenes
Deputy Executive Director
The Redevelopment Agency of the City of San Jose
60 South Market Street, Suite 470
San Jose, CA 95113-2335

Mr. Ralph A. Qualls, Jr.
Director of Public Works
City of San Jose
801 North First Street
San Jose, CA 95110

SANTA CLARA VALLEY WATER DISTRICT, DAVID J. CHESTERMAN (AUGUST 9, 2000)

Response to Comment SCVWD-1

Comment noted.

SAN JOSE
CAPITAL OF SILICON VALLEY

CITY OF SAN JOSÉ, CALIFORNIA

DEPARTMENT OF PLANNING, BUILDING AND CODE ENFORCEMENT
801 NORTH FIRST STREET
SAN JOSE, CALIFORNIA 95110-1795

JAMES R. DERRYBERRY
DIRECTOR

August 9, 2000

U.S. Army Corps of Engineers
Attn: Nina Bicknese
1325 J Street
Sacramento, CA 95814

SUBJECT: DRAFT INTEGRATED GENERAL RE-EVALUATION REPORT/ENVIRONMENTAL IMPACT REPORT/SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT FOR THE PROPOSED MODIFICATIONS TO THE GUADALUPE RIVER PROJECT IN DOWNTOWN SAN JOSE.

Dear Ms. Bicknese:

Thank you for the opportunity to review and comment on the Draft Environmental Impact Report/Supplemental Environmental Impact Statement (DEIR/SEIS) for the Proposed Modifications to the Guadalupe River Project in Downtown San Jose. The City of San Jose requests that the document be revised to address the following comments:

1. Section 6.2.1.4 of the Draft EIR/SEIS (Page 6-5) is incorrect. Neither the adopted 1997 San Jose International Airport Master Plan, nor any subsequent City or airport plan, has proposed replacement of the Airport Parkway Bridge or any specific widening of Airport Boulevard. Construction of the Skyport Bridge (the "new bridge south of the present bridge site") is part of the City/Caltrans Route 87 Freeway Project and was completed in 1999. The Airport Master Plan proposes construction of a two-lane bridge, currently under design, that would provide a second connection between Airport Boulevard and the existing parking lot/future garage parcel on the east side of the river north of Terminal A. SJ-1

2. One component of the proposed SCVWD/Corps modified project is mitigation planting along the river between I-880 and Airport Parkway ("Reach A"), much of which is Airport property with an easement granted to the SCVWD. According to Page 6-7 of the Draft EIR/SEIS, the SCVWD/Corps' proposed <u>Upper Guadalupe River Flood Control Project</u> includes flood control improvements to Reach A. The Airport had submitted comments on the Draft EIR/EIS for this project in April 1997 and has not yet received any responses to those comments. Then, according to Page 6-9 of the Draft EIR/SEIS, the proposed <u>Lower Guadalupe River Flood Control Project</u> also includes flood control improvements to the same reach of the river, for which an EIR/EIS is currently being prepared by the SCVWD/Corps. The Draft EIR/SEIS therefore needs to clarify the relationship of the Reach A component of this project with the simultaneously-proposed Reach A project components of the Upper Guadalupe River Flood Control Project and Lower Guadalupe River Flood Control Project. The City needs to understand why and how three distinct flood control projects involve the same one-mile stretch of the river. SJ-2

3. Another component of the proposed SCVWD/Corps modified project is mitigation planting along the west side of the river between Coleman Avenue and Hedding Street ("Segment 2" of the flood control project). Since much of this land is owned by the City of San Jose as Airport property (with land use oversight by the Federal Aviation Administration), the Draft EIR/SEIS should clarify the entitlement under which the Water District (or the Corps) constructs, operates, and maintains the existing flood control improvements and proposed mitigation plantings in Segment 2. The project sponsors are reminded that while the City, with required FAA concurrence, granted an easement to the Water District in 1994 for use of Airport property between Hedding Street and I-880 ("Segment 1" of the flood control project), a similar conveyance has not occurred for Segment 2. SJ-3

4. The Airport Department should be added to the SCVWD's distribution list for project-related documents and notices. Mailings should be sent to: City of San Jose Airport Department, 1732 N. First Street, Suite 600, San Jose, CA 95112, Attn: Cary Greene, Airport Planner. The project sponsors are encouraged to contact Mr. Greene at (408) 501-7702, or David Maas, Deputy Director of Aviation, at (408) 501-7704 to discuss the above comments. SJ-4

We look forward to reviewing the final document when it becomes available. If you have any questions regarding these comments, please contact me at 408-277-4576.

Sincerely,

Janis Moore
Planner II

DEIR-SEIS Guad River Downtown Pjct Ltr.doc/JAM

CITY OF SAN JOSE, CALIFORNIA, DEPARTMENT OF PLANNING, BUILDING AND CODE ENFORCEMENT, JANIS MOORE (AUGUST 9, 2000)

Response to Comment SJ-1

See Response to Comment EPA-19, which includes an update of Section 6.2.1.4, "San Jose International Airport Expansion Plan."

Response to Comment SJ-2

The Upper Guadalupe River Project Final EIR/EIS was issued in July 2000. The proposed Reach A mitigation site for the Guadalupe River Project (Section 3.4.2.9, "Onsite and Offsite Mitigation Areas") does not conflict with the maintenance ramps proposed by the Upper Guadalupe River Project. It is not known at this time what flood protection improvements may be proposed by the Lower Guadalupe River Project in Reach A to ensure the proper integration of the newly proposed Lower Guadalupe River Project and the Guadalupe River Project. Based on existing information, there would be no overlap of mitigation occurring in Reach A as a result of the three flood protection projects. SCVWD will continue to coordinate with the City of San Jose and the City of San Jose Airport Department regarding the Guadalupe River Project and the planning efforts for Reach A.

Response to Comment SJ-3

SCVWD and the Corps constructed Segment 2 with a Right of Entry from the City of San Jose until such time as an easement is granted to SCVWD. SCVWD forwarded to the City of San Jose on April 5, 2000, the various Plats and Descriptions for Segment 2. The City of San Jose may complete their conveyance of lands to SCVWD, as was done for Segment 1. City and SCVWD staffs are working to finalize the Segment 2 right of way.

Response to Comment SJ-4

Concur. However, for the record, the following individuals involved with the Airport, Mr. Cary Greene (Airport Planner), Mr. Brooks Mancini (Chair, City of San Jose Airport Commission), and Ms. Charlotte Powers (City of San Jose Councilmember, Liaison to the Airport Commission) are currently on SCVWD's distribution list. Therefore, these individuals were sent for their review and comments the General Re-Evaluation Report/EIR/SEIS for the Guadalupe River Project.

Winston H. Hickox
Agency Secretary
California Environmental
Protection Agency

Department of Toxic Substances Control

Edwin F. Lowry, Director
700 Heinz Avenue, Suite 200
Berkeley, California 94710-2721

Gray Davis
Governor

August 3, 2000

U.S. Army Corps of Engineers
Sacramento District Planning Division
Attn: Nina Bicknese
1325 J Street
Sacramento, California 95814-2922

Dear Ms. Bicknese:

Thank you for the opportunity to comment on the Draft General Re-Evaluation Report/Environmental Impact Report and Supplemental Environmental Impact Statement (draft report) for Proposed Modifications to the Guadalupe River Project, Downtown San Jose, California [SCH#1999102056]. As you may be aware, the California Department of Toxic Substances Control (DTSC) oversees the cleanup of sites where hazardous substances have been released pursuant to the California Health and Safety Code, Division 20, Chapter 6.8. As a resource agency, DTSC is submitting comments to ensure that the environmental documentation prepared for this project to address the California Environmental Quality Act (CEQA) adequately addresses any required remediation activities which may be required to address any hazardous substances release. TSC-1

DTSC has reviewed the above mentioned document and has the following comments:

1. Page 3-36 of the report states that a soil management plan that includes protocols for classifying the content of wastes in soils has been prepared. DTSC would like to clarify that Title 22, California Code of Regulations, Chapter 11 identifies those wastes which are subject to regulation as hazardous wastes. Criteria in addition to the waste extraction test procedure are identified in this chapter and should be included in the soil management plan.

2. Additional measures that will be implemented in the soil management plan include extensive sampling for total and methyl mercury. It is unclear why other chemicals will not be sampled for, especially if the soil will be reused. TSC-2

3. Page 3-37 of the report includes a description of a Hazardous and Toxic Materials Contingency Plan. The report does not state the review process this plan will go through and what agency(ies) will be reviewing and approving the plan. In addition, the report does not specify the process that will be followed in order to determine the appropriate action. Division 20, Chapter 6.8 of the California Health and Safety Code TSC-3

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contains specific requirements for the remediation of hazardous waste sites.

4. Section 4.9.1 states that material excavated from Segment 3 and the bypass would be hauled to disposal sites on Zanker Road and Newby Island. Please specify the type of material that these sites have been permitted to accept. In addition, it is unclear whether the soil proposed for excavation has been characterized for disposal purposes. TSC-4

5. Section 4.13.1 specifically lists environmental regulations pertaining to the use, disposal and cleanup of hazardous materials. Division 20, Chapter 6.8 of the California Health and Safety Code should be added to this list. Chapter 6.8 established DTSC's Site Mitigation Program to provide for response authority for releases of hazardous substances, including spills and hazardous waste disposal sites that pose a threat to the public health or the environment. TSC-5

6. Section 4.13.2 identifies the Union Pacific Property as a known hazardous waste site. Please specify what agency is/will be overseeing the remediation of the property. The report states that the property will be remediated to a level that would require Level D worker protection. DTSC requires that cleanup goals be set based on the results of a site-specific human health risk assessment. It is unclear whether the goal being proposed for this property will be sufficient for the proposed future use. TSC-6

7. Section 5.13.3 describes the proposed action to mitigate potential exposure of workers to contaminated soil. This section should also describe how potential exposures from onsite contaminants to workers, residents and ecological receptors will be prevented during the remediation activities. The report should include: (1) an assessment of air impacts and health impacts associated with the excavation activities; (2) identification of any applicable local standards which may be exceeded by the excavation activities, including dust levels and noise; (3) transportation impacts from the removal or remedial activities; and (4) risk of upset should be there an accident at the Site TSC-7

DTSC can assist your agency in overseeing characterization and cleanup activities through our Voluntary Cleanup Program. A fact sheet describing this program is enclosed. We are aware that projects such as this one are typically on a compressed schedule, and in an effort to use the available review time efficiently, we request that DTSC be included in any meetings where issues relevant to our statutory authority are discussed. TSC-8

Please contact me at (510) 540-3843 if you have any questions or would like to schedule a meeting. Thank you in advance for your cooperation in this matter.

Sincerely,

Barbara J. Cook

Barbara J. Cook, P.E., Chief
Northern California - Coastal Cleanup
Operations Branch

Enclosures

cc: without enclosures

Governor's Office of Planning and Research
State Clearinghouse
P. O. Box 3044
Sacramento, California 95812-3044

Guenther Moskat
CEQA Tracking Center
Department of Toxic Substances Control
P.O. Box 806
Sacramento, California 95812-0806

DEPARTMENT OF TOXIC SUBSTANCES CONTROL, BARBARA J. COOKE, P.E. (AUGUST 3, 2000)

Response to Comment TSC-1

The criteria used for classification include Title 22, California Code of Regulations (CCR), Section 66261, as indicated on page 8, Section 3.1, Hazardous Waste, of the SMP.

Response to Comment TSC-2

The soil management plan was prepared in 1994 based on extensive groundwater sampling and analysis of total petroleum hydrocarbon as diesel (TPHd), total petroleum hydrocarbon as gasoline (TPHg), total recoverable petroleum hydrocarbon (TRPH), metals, volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and PCBs. The SMP will be updated to reflect project revisions and results of additional investigations and remediation completed since that time.

A comprehensive sampling program that included Segment 3 of the Bypass System Alternative, was conducted over several seasons in 1991, 1993, and 1994. Project site soils were preliminarily characterized and a SMP was developed to outline disposal requirements (CH2M HILL, 1994). A letter prepared by the RWQCB concurred with the SMP stating that in Segment 3, "the appropriate soil management options for the soil excavated from the creek channel are standard reuse or disposal practices for nonhazardous material" (Morse, pers. comm.). The SMP outlines soil management and disposal criteria (disposal classification) and specifies confirmatory sampling during construction. A discussion of the SMP Plan is included in Section 3.4.3, "Environmental Commitments." Additionally, the discussion of the Soil Management Plan in the Draft EIR/SEIS has been modified to explicitly state that confirmatory sampling would be conducted and soils classified pursuant to the criteria outlined in the RWQCB-approved SMP. See Response to Comment RWQCB-9.

Response to Comment TSC-3

The revised Soil Management Plan will include a description of the Hazardous and Toxic Materials Contingency Plan consistent with Division 20, Chapter 6.8 of the California Health & Safety Code. The revised Soil Management Plan will be submitted for review to the California Department of Toxic Substances Control if requested. It is anticipated that the Regional Water Quality Control Board will continue to provide oversight regarding plan adequacy and implementation.

Response to Comment TSC-4

Zanker Road and Newby Island are permitted to accept nonhazardous solid wastes and inert wastes (Class III). Designated and hazardous waste generated by the project will be directed only to disposal facilities permitted to accept them. The revised SMP will clarify waste classification methods that will be used to determine whether excavated soils can be reused on site or must be disposed of offsite.

See Response to Comment TSC-2.

Response to Comment TSC-5

Division 20, Chapter 6.8 of the California Health & Safety Code will be added to the list in Section 4.13.1.

The following change is made to the Draft EIR/SEIS:

Page 4-65. The fourth paragraph of Section 4.13.1, "Regulations," is modified as follows:

> Various State laws also govern hazardous materials and hazardous waste management. State hazardous waste regulations are primarily contained in the California Code of Regulations, Title 22, Division 4, Environmental Health. The Hazardous Waste Control Law lists hundreds of hazardous and potentially hazardous chemicals. In addition, this code establishes criteria for identifying hazardous materials; regulates the storage, transport, and disposal of hazardous wastes; and identifies hazardous wastes that cannot be disposed of on land. The California Department of Toxic Substances Control (DTSC), through Division 20, Chapter 6.8 of the California Health and Safety Code, is empowered to provide response authority for releases of hazardous substances, including spills and hazardous waste disposal sites that pose a threat to the public health or the environment. Water quality regulations, developed from the Porter-Cologne Water Quality Control Act, are designed to protect the quality of waters in California. Title 23 of the California Code of Regulations contains the water quality regulations pertinent to environmental contamination. The San Francisco RWQCB and SCVWD administer these regulations in the San Jose area.

Response to Comment TSC-6

The RWQCB will oversee remediation of the entire project including the UPPR property. The revised soil management plan will provide additional detail on cleanup goals. These goals will be based on site-specific health risk assessment and will be consistent with anticipated site uses.

Response to Comment TSC-7

Potential exposure to onsite contaminants by workers performing remediation work will be prevented by preparing and implementing a project-specific Health and Safety Plan. The Health and Safety Plan will identify potential work hazards and the measures required to minimize exposure, including appropriate protective equipment. Only contractors trained and licensed to manage hazardous waste will be retained to work on remediation activities. Section 5.10, "Air Quality," of the Draft EIR/SEIS includes a detailed discussion of the anticipated air quality impacts resulting from construction of the Bypass System Alternative. Impacts on air quality associated with excavation will be mitigated through implementation of dust control measures and are not expected to be significant because no air quality standards will be violated and no exposure to substantial concentrations of pollutants will occur.

Noise impacts are described in Section 5.11, "Noise," of the Draft EIR/SEIS. The analysis concludes that construction of the Guadalupe River Project with Bypass System Alternative would not exceed applicable noise-level objectives.

Impacts on transportation and traffic are described in Section 5.9, "Transportation and Traffic," of the Draft EIR/SEIS. The analysis concludes that the effects on roadway capacity, parking, and disruption of railway operations would be less than significant. Section 5.10 includes a summary of estimated pollutant emissions resulting from construction-related transportation activities. These emissions are not expected to exceed applicable emissions criteria nor result in unacceptable pollutant loads.

The potential risk of upset should there be an accident on site is addressed in the Health and Safety Plan, which describes all potential work hazards and establishes procedures to minimize adverse effects on human health and safety.

Response to Comment TSC-8

Comment noted.

VTA Santa Clara Valley Transportation Authority

August 8, 2000

U. S. Army Corps of Engineers
Sacramento District Planning Division
1325 J Street
Sacramento, CA 95814-2922

Attention: Nina Bicknese

Subject: SCH No. 199902056 / Guadalupe River Project Modifications, Downtown San Jose, Draft Reevaluation/EIR/EIS

Dear Ms. Bicknese:

Santa Clara Valley Transportation Authority (VTA) staff have reviewed the *Integrated General Re-Evaluation Report/Environmental Impact Report/Supplemental Environmental Impact Statement* (Report) *for Proposed Modifications to the Guadalupe River Project, Downtown San Jose, California* (Project). We have the following comments.

Saint John Street Bridge
The Report states that the existing Saint John Street bridge will be removed and replaced with a pedestrian bridge as part of the Project. VTA staff suggest that the new bridge be constructed to allow vehicles to use it as well. This bridge serves as a reliever route which provides additional and vital connections from the Arena area to the downtown area by bridging natural (the River) and manmade (Route 85) barriers to through-movements.

Downtowns function best when there are many ways for travelers, including bicyclists, pedestrians, and motorists, to get in and out of the area. For this reason, VTA staff is interested in seeing that this vehicle connection across the Guadalupe River be preserved. VTA staff suggest that the new bridge be constructed to accommodate one lane of vehicle traffic in each direction, sidewalks and bicycle facilities. VTA-1

Public Access to the River Trail
To facilitate and encourage pedestrian and bicycle activity, VTA staff recommend that the Project provide public access points to the River Trail at all street crossings of the Guadalupe River. VTA staff stress the importance of convenient access to the Trail and encourage the Project to include or accommodate the entryways. VTA-2

Pedestrian and Bicycle Facilities
VTA staff also recommend that the proposed project include pedestrian and bicycle amenities on the River Trail in the downtown San Jose area. Amenities should include pedestrian-scale lighting, pathfinder signage, refuse containers and landscaping, where appropriate. VTA-3

Proposed Bridge Crossing
VTA staff recommend that the Report recognize the proposed pedestrian/bicycle bridge crossing the Guadalupe River at River Oaks Drive, north of the project area. VTA-4

Route 87 HOV Lanes
The *Measures A + B Transportation Improvement Program* includes the *Route 87 HOV Lanes Project* (HOV Project). The HOV Project proposes to widen Route 87, from 280 to 0.2 miles north of Julian Street, from a four- to a six-lane freeway. The HOV Project limits are in close proximity to the Project's limits.

VTA staff recommend that the Report include a discussion of the HOV Project and include provisions for the coordination of the design and construction activities for both projects. For additional information about the HOV Project, please contact Arul Edwin of Valley Highway Associates at (408) 952-4200. VTA-5

We appreciate the opportunity to review this project. If you have any questions, please call Lauren Bobadilla of my staff at (408) 321-5776.

Sincerely,

Derek A. Kantar

Derek A. Kantar
Environmental Program Manager

DAK:LGB:kh

cc: Devin Mody, SCVWD
Arul Edwin, VHA
John Ristow, VTA
Roy Molseed, VTA Senior Environmental Analyst
Grieg Asher, VTA TOD Program Manager

SANTA CLARA VALLEY TRANSPORTATION AUTHORITY, DEREK A. KANTAR (AUGUST 8, 2000)

Response to Comment VTA-1

The existing St. John Street Bridge will not be removed. The bridge will serve as both a pedestrian and vehicular bridge.

The following change is made to the Draft EIR/SEIS:

Page 3-28. Section 3.4.2.6, "Bridge Removal and Replacement," is modified as follows:

3.4.2.6 Bridge Removal and Replacement

UPRR No. 3 and No. 4 bridges would be removed, and it is assumed that UPRR No. 4 Bridge would be replaced. Exposed gas and sewer lines cross the river 150 feet upstream from UPRR No. 4 Bridge; they are encased in a concrete enclosure 4.5 feet wide by 3 feet high. Because this enclosure might act as a barrier to fish at low flows, it would be relocated under the riverbed using a sewer siphon system. The Old Julian Street Bridge will also be removed. Because there is an exposed sewerline under the Old Julian Street Bridge, a new sewerline would be built under the river on the downstream side of the Old Julian Street Bridge using a sewer siphon system or constructed as part of the bridge. ~~In Segment 3B, the St. John Street Bridge might be demolished. If demolished, it would be replaced with a pedestrian bridge. Because there is a sewerline on the St. John Street Bridge, a new sewerline would be built under the river on the downstream side of the bridge, using a sewer siphon system or constructed as part of the bridge.~~ Bridge removal, if deemed necessary, would cause temporary disturbance of the western and eastern bank vegetation and the river substrate. Effects of bridge removal and replacement are included as part of the ~~Proposed Action~~ Bypass System Alternative

Page 3-31. The second complete paragraph is modified as follows:

As the eastern top-of-bank trail continues downstream from West Santa Clara Street, there will be an at-grade access along River Street between West Santa Clara Street and St. John Street. There will also be at-grade access at St. John Street and New Julian Street. The trail will connect with the St. John Street Bridge~~ or, if the bridge is removed, the future pedestrian bridge~~. For trail users who do not wish to cross at-grade at New Julian Street, there will be stairs upstream and downstream, and a short river trail under the bridge. The top-of-bank trail will continue downstream from New Julian Street crossing the reconstructed UPRR No. 4 track either via a bridge or as an underground crossing. The final railroad crossing method would be determined in coordination with UPRR. The trial will continue to above Coleman Avenue, where the trail will descend the armored bank to pass under the Coleman Avenue Bridge and connect with the eastern bank trail in Segment 2.

Response to Comment VTA-2

The Guadalupe River Project with Bypass System Alternative has been designed to provide extensive public access to the Guadalupe River and includes both stairs and ramps as indicated on Figure 3.4-9. This figure also indicates public access to the river trail at all street crossings and, in most areas, both pedestrian and bicycle access.

Response to Comment VTA-3

The Guadalupe River Project with Bypass System Alternative includes recreational amenities consistent with the City of San Jose Guadalupe River Park Master Plan. To date, recreational features between I-880 and Coleman Avenue include riverwalks, refuse containers, picnic tables, benches, and landscaping. Additional recreation amenities will be constructed in Segments 3A, 3B, and 3C Phase III. The Redevelopment Agency of San Jose can request that additional recreational improvements, above the baseline, be incorporated at the Agency's cost. The Redevelopment Agency is working closely with the Corps and SCVWD to ensure that pedestrian and bicycle amenities, including lighting, signage, refuse containers, are included in the Bypass System Alternative. The Corps, SCVWD, and the Redevelopment Agency frequently discuss and define the recreation components of the Bypass System Alternative at the City of San Jose's monthly Technical and Task Force Meetings.

Response to Comment VTA-4

The proposed pedestrian/bicycle bridge crossing at River Oaks Drive is outside the boundaries of the Guadalupe River Project with Bypass System Alternative and was not included in the project description or on the recreation map. However, the information contributed by VTA provides context for the overall pedestrian and bicycle connectivity provided along the Guadalupe River corridor.

Response to Comment VTA-5

The Draft EIR/SEIS discusses the State Route 87 Freeway Upgrade Project in Section 6.2.1.2, "State Route 87 Freeway Upgrade Project." The discussion now includes provisions for continued coordination of design and construction activities for both the Guadalupe River Project with Bypass System Alternative and the State Route 87 Freeway Upgrade Project. See Response to Comment CT-12.

CHAPTER 4

Special Interest Groups

BENSHOOF & ASSOCIATES, INC.
TRANSPORTATION ENGINEERS AND PLANNERS
10417 EXCELSIOR BOULEVARD, SUITE TWO / HOPKINS, MN 55343 / (952) 238-1667 / FAX (952) 238-1671

October 4, 2000

REFER TO FILE: 90 – 20

Ms. Nina Bicknese
U.S. Army Corps of Engineers
1325 J Street
Sacramento, CA 95814

RE: Comments on Draft General Re-Evaluation & Environmental Report for Proposed Project Modifications, Guadalupe River Project in Downtown San Jose, CA

Dear Nina:

As a follow-up to our recent conversation, this is to present comments regarding the above referenced report on behalf of the San Jose Arena Management Corporation. We serve as transportation planning and engineering consultants for the San Jose Arena Management Corporation and have reviewed this report relative to potential transportation impacts the Guadalupe River Project may have on the Arena.

Our review has focused on the following sections in Volume 1 of the report:

- Section 4.9 Transportation and Traffic in Chapter 4: Affected Environment
- Section 5.9 Transportation and Traffic in Chapter 5: Environmental Consequences
- Section 6.2.10 Transportation and Traffic in Chapter 6: Cumulative Impacts and Other Consequences

Our comments are presented next by specific sub-section in the report.

Section 4.9.1 Existing Roads and Bridges, page 4-59. This section includes the statement that the St. John Street bridge is slated for replacement with a pedestrian bridge. We understand that the City's current plan is to leave the existing bridge in place. Another statement in this section is that "None of the streets crossed by the proposed bypass is classified as a major collector." It is important to note that the San Jose General Plan designates both Julian Street and Santa Clara Street as Arterials. BAI-1

Section 4.9.2 Parking, page 4-60. This section notes that several public parking lots are located in the vicinity of the study area and lists several institutions to which persons parking in these lots are destined. The list of institutions does not include the San Jose Arena. The final report should note that major events at the San Jose Arena create a parking demand for 5000 to 6000 vehicles. The majority of these persons park in lots on BAI-2

the west side of the Guadalupe River, but another large portion park in facilities on the east side of the Guadalupe River and either walk to the Arena or ride the shuttle bus. BAI-2

Section 5.9.3.2 Traffic Circulation, page 5-74. This section indicates that during construction, two lanes of New Julian Street and two lanes of West Santa Clara Street would be closed for as long as 2 months. A subsequent statement in this section indicates that the project partners will ensure that three lanes of West Santa Clara Street and New Julian Street remain open during a.m. and p.m. peak commute periods and during large events at the San Jose Arena.

Though the preservation of three lanes described above during peak periods is helpful, we still are concerned that the subject lane closures on Julian Street and Santa Clara Street could have very serious impacts on the San Jose Arena because both of these streets are crucial access routes for motorists traveling to and from the Arena. In addition, Santa Clara serves two other important functions for the Arena:

- It accommodates a high volume of pedestrian movements for persons who park in the downtown area and walk to and from the Arena.
- It accommodates shuttle buses, which transport persons between the downtown area and the Arena, both before and after events. BAI-3

Given the above potential negative impacts, we would request that the final report acknowledge these potential difficulties and describe a mitigation program to avoid serious problems. Three items that we would encourage be included in the mitigation program are:

a) Scheduling the two month lane closures on Julian Street and Santa Clara Street during a period when fewer large events are scheduled at the Arena. On a general basis, the number of large events at the Arena typically is lower during the summer months. Specific scheduling to minimize conflicts can be arranged with Ken Sweezey of the Arena Management Corporation. Ken's address and phone number are: San Jose Arena Management Corporation, 525 West Santa Clara Street, San Jose, CA 95113, 408-999-5732.

b) Developing a detailed traffic management plan to maintain traffic and pedestrian movements through the construction zone with minimal disruption.

c) Extensive communication program to coordinate with involved stakeholders, including representatives of the San Jose Arena Management Corporation, during development of the traffic management plan and implementation of that plan during the period of construction.

Section 6.2.10 Transportation and Traffic, page 6-66. This section acknowledges that construction of the Guadalupe River Project will overlap with the State Highway 87 Project. However, this section does not address potential cumulative transportation BAI-4

impacts associated with other simultaneous projects that may occur in the Guadalupe River Project area, including: the Vasona LRT Project, changes implemented by the City in the River Street Historic Area, and potential private development projects. For example, the current schedule for the Vasona LRT Project includes construction of the segment between the Diridon Station and Woz Way in years 2001 and 2002.

In the context of the above points, we would request that the final report include the following three items:

BAI-4

1) Acknowledge that several other projects with potential transportation impacts will be occurring in the study area during the period of construction for the Guadalupe River Project.

2) Acknowledge that adverse transportation impacts could occur due to the cumulative effects of projects occurring in the area.

3) Describe a mitigation program involving extensive coordination between representatives of the Guadalupe River Project and other projects in the study area that would result in a comprehensive schedule and plan to manage transportation operations with minimal negative impacts during the construction period.

I appreciate your consideration and follow-through regarding the comments expressed in this letter. I apologize for submitting this comment letter after the close of your official comment period. The reason for my tardiness is that I just saw your report for the first time on October 3. Let me know if you have any questions about items addressed in this letter.

Sincerely,

BENSHOOF & ASSOCIATES, INC.

Jim Benshoof

James A. Benshoof

c. Jim Goddard, San Jose Arena Management Corporation
Ken Sweezey, San Jose Arena Management Corporation
Chris Morrisey, San Jose Arena Authority
Julia Nguyen, San Jose Streets and Traffic Department
Dennis Korabiak, San Jose Redevelopment Agency

BENSHOOF & ASSOCIATES, INC., JAMES A. BENSHOOF (OCTOBER 4, 2000)

Response to Comment BAI-1

The Draft EIR/SEIS has been updated to reflect that the St. John Street Bridge will not be removed and that New Julian Street and Santa Clara Street are arterials.

The following change is made to the Draft EIR/SEIS:

Page 4-59. Section 4.9.1, "Existing Roads and Bridges," is modified as follows:

4.9.1 Existing Roads and Bridges

Segments 1, 2, and 3 and Reach A are located on the northwest edge of downtown San Jose, southwest of San Jose International Airport. Major surface streets in the project area include Santa Clara Avenue, New Julian Street, Old Julian Street, St. John Street, Coleman Avenue, Park Avenue, and Woz Way. Old Julian Street has ~~already~~ been closed~~ and St. John Street is slated for replacement with a pedestrian bridge~~. The most recent San Jose General Plan includes a list of streets designated as major collectors for the year 2020. ~~None of the streets crossed by the proposed bypass system is classified as a major collector~~ Julian Street and Santa Clara Street, which are both crossed by the proposed bypass system, are classified as arterials in the San Jose General Plan (City of San Jose, 1994). Freeways that traverse the area include I-880, ~~and~~ I-280 , and State Route 87, currently being upgraded to freeway standards. Table 4.9-1 gives traffic volumes for major roads that would be used as haul routes. The study area would also cross UPRR tracks No. 3 and No. 4. The tracks intersect the Guadalupe River between Old Julian Street and Coleman Avenue in the northern portion of the project site.

Response to Comment BAI-2

In response to the comment on parking at the San Jose Arena, a second paragraph has been added to Section 4.9.2, "Parking."

The following change is made to the Draft EIR/SEIS:

Page 4-60. Section 4.9.2, "Parking," is modified as follows:

The San Jose Arena is also located in the vicinity of the project. During major events, it can create demand for 5,000 to 6,000 vehicles. Although a large portion is accommodated by lots on the east side of the Guadalupe River, the majority of that demand is accommodated by parking lots on the west side of the river.

Response to Comment BAI-3

Project construction activities would occur primarily during summer months when fewer large events are scheduled at the San Jose Arena. Also, the proposed mitigation measures include keeping three lanes of traffic open on Julian Street and Santa Clara during peak commute periods and during large events at the San Jose Arena. Maintaining open lanes of traffic benefits commuters and the shuttle buses that transport persons between downtown areas and the San Jose Arena before and after events.

The following change is made to the Draft EIR/SEIS:

Page 5-74. Section 5.9.3.2, "Traffic Circulation," is modified as follows:

> During flood events, the Almaden Boulevard, Vine Street, and Almaden Avenue would be closed for approximately 24 to 48 hours during operational flood events~~ to redirect water back into the river channel~~. In addition, construction activities on Julian Street and Santa Clara Street will be designed to ensure continued pedestrian movement through the construction zone with minimal disruption.

Response to Comment BAI-4

The Vasona LRT Project will result in construction during 2001 and 2002 in the vicinity of the Guadalupe River Project. However, the LRT Project will cross neither Julian Street nor Santa Clara Street. In addition, the LRT Project EIR states that construction involving crossings of major roadways would not occur during weekdays. Instead, it would be limited to weekends and would not result in entire road closures. Consequently, the cumulative construction impacts of the LRT Project, when combined with those of the Guadalupe Project, would not result in cumulatively significant transportation impacts. However, the discussion of the Downtown Guadalupe Project's cumulative transportation and traffic impacts are modified to include the Vasona LRT Project.

The following change is made to the Draft EIR/SEIS:

Page 6-66. Section 6.2.10, "Transportation and Traffic," is modified as follows:

> ### 6.2.10 Transportation and Traffic
>
> The direct effects of the Guadalupe River Project with ~~Proposed Action~~ Bypass System Alternative on transportation and traffic are described in Section 5.9, "Transportation and Traffic." Cumulative impacts on traffic in the project area are related to the combination of the Guadalupe River Project with ~~Proposed Action~~ Bypass System Alternative ~~and~~, completion of State Route 87 between New Julian Street and Highway 101, and construction of the Vasona LRT Project. Construction of the bypass system as part of the ~~Proposed Action~~ Bypass System Alternative is scheduled to begin in ~~2001~~ 2002 and end in ~~2002~~ 2004. The overlap between the construction periods for the ~~Proposed Action~~ Bypass System Alternative ~~and~~, the State Route 87

project ~~in 2001~~, and the Vasona LRT Project will cause short-term cumulative impacts on traffic. However, these impacts would not be substantial because project-specific mitigation measures for traffic have been developed~~. The~~ and will be implemented for all three projects. Consequently, the short-term cumulative impacts on transportation and traffic during construction are considered less than significant.

The Guadalupe River Project with ~~Proposed Action~~ Bypass System Alternative would not contribute to a long-term cumulative impact on transportation and traffic because roadway capacities through the project site would not change and only occasional trips would be required for maintenance and operation.

GUADALUPE
RIVER PARK & GARDENS

August 4, 2000

U.S Army Corps of Engineers
Sacramento District Planning Division
Attn: Nina Bicknese
1325 J Street
Sacramento, CA 95814-2922

Dear Nina,

On behalf of the Board of Directors of the Guadalupe River Park & Gardens Corporation, I am submitting comments on the Draft General Re-Evaluation Report/Environmental Impact Report and Supplemental Environmental Impact Statement for Proposed Modifications to the Guadalupe River Project, Downtown San Jose, CA.

We are strongly supportive of the Proposed Action, as described in the report dated June 2000, with the addition of comments and concerns listed below.

Continuous Trail Access
We have been vocal advocates for the inclusion of a continuous trail system on both sides of the river (to the extent that is possible), in order to provide recreational opportunities and to serve as an alternative transportation corridor. The Guadalupe River Park is being developed in a densly populated urban area. Thus the inclusion of pedestrian undercrossings under the major cross streets is a safety issue as well as an enhancement to the recreational experience. We further urge you, when designing and constructing the proposed trails and access points, to ensure that they allow the most complete usage of the park by all segments of the community. GRPG-1

Inlet/Outlet Structures
A major issue of concern for us is the design of the inlet and outlet structures for the proposed box culverts, particularly the inlet structures downstream of Santa Clara Street and St. John Street. We were unaware of the potential impact of these structures at the time of the public scoping sessions on proposed modifications to the Authorized Project in November 1999, and thus did not comment on them at that time. GRPG-2

Our concern has to do with the size and prominence of these structures at one of the most central and visible spots along the river. We urge the Corps to work closely with City of San Jose, the Redevelopment Agency, and the Guadalupe River Park Task Force to integrate the structures into the landscape and minimize their visual impact as much as possible. This is an area of intense public use, immediately across from the San Jose Arena. If the view of the river from the Santa Clara Street Bridge is dominated by massive, yawning, concrete structures, we fear there will be a negative public response to the flood control project. GRPG-2

More importantly, we wish to express concern regarding public safety. We believe consideration should be given to a design for the inlet and outlet structures that prohibits, or at the least discourages, children and the homeless from entering the box culverts. GRPG-3

Educational Opportunities
We believe there are many opportunities to incorporate educational elements into the design of the project that will further enhance the public's appreciation for the history of the Guadalupe River and understanding of the flood control project. These might include incorporating murals or other graphics on vertical retaining walls, interpretive signage at the inlet structures, or some hands-on children's interpretive component. While we are not providing specific suggestions, we believe various educational opportunities should be explored during the design stage. They might serve the dual purpose of being informative *and* providing mitigation for some of the hardscape necessary for flood protection. GRPG-4

Thank you very much for inviting us to comment on this proposed plan and for your consideration of our recommendations. We appreciate the Corps' sensitivity in dealing with the environmental issues, recreational components, and other competing concerns inherent in this project. As community advocates for the Guadalupe River Park & Gardens we sincerely hope the flood control project remains on schedule for completion by the end of 2002. We look forward to seeing your final report.

Sincerely,

James E. Towery
Board President

GUADALUPE RIVER PARK & GARDENS, JAMES E. TOWERY (AUGUST 4, 2000)

Response to Comment GRPG-1

The design will include a continuous trail system on both banks to the maximum extent feasible. The Corps and SCVWD will continue to coordinate directly with the Guadalupe River Park and Gardens Corporation on the project.

Response to Comment GRPG-2

See Response to Comment CSJ-3.

Response to Comment GRPG-3

See Response to Comment CSJ-2.

Response to Comment GRPG-4

See Response to Comment VTA-3.

July 14, 2000

Ms. Nina Bicknese
Biological Sciences Environmental Manager
Sacramento District Planning Division
U.S. Army Corps of Engineers
1325 J Street
Sacramento, CA 95814-2922

Subject: Guadalupe River Project,
Downtown San Jose, California
Draft General Re-Evaluation & Environmental Report
For Proposed Project Modifications, June 2000

Dear Ms. Bicknese:

This is to inform you that the San Jose Water Company (SJWC), in receipt of the Guadalupe River Project Draft General Re-Evaluation, would like to discuss at design, the comments submitted as follows:

Segment 3A The SJWC directs your attention to utility relocation for the Bypass System: The 12" main on New Julian Street, and Hydrant A-00067. SJWC-1

Segment 3B The SJWC property located along the east side of the Guadalupe River between San Fernando and Santa Clara Streets: Selection of the pedestrian barrier on the retaining wall. SJWC-2

Segment 3B The SJWC objects to the proposed Trail/Maintenance Road between San Fernando and Santa Clara Streets (Not part of this Project) referenced to in Figure 3.4-9. SJWC-3

If you have any questions, please call me at 279-7850.

Thank you.

Sincerely yours,

Michael S. Asahina

Michael S. Asahina, P.E.
Planning Supervisor

cc: To File
Craig Giordano, SJWC
Mike McQueen, SJWC
Devin Mody, SCVWD

H:\Public\ EIR\Guadalupe 7/26/00

SAN JOSE WATER COMPANY, MICHAEL S. ASAHINA (JULY 14, 2000)

Response to Comment SJWC-1

SCVWD will be responsible for the relocation of all utilities for this project except those utilities that they request the Corps to relocate.

Response to Comment SJWC-2

The Corps and SCVWD agree with the comment. As part of the Bypass System Alternative, a pedestrian barrier will be installed on the retaining wall located on SJWC property on the east side of the Guadalupe River between San Fernando and Santa Clara Streets. The type of barrier has not yet been determined. Coordination with SCVWD, SJRA, CSJ, and the SJWC will be required to finalize the design.

Response to Comment SJWC-3

Your comment is noted. The project will not include the construction of this proposed trail along the west bank between San Fernando and Santa Clara Street as referenced in Figure 3.4-9. Any construction of a trail along the west bank of the Guadalupe River between San Fernando and Santa Clara Streets may occur with future development opportunities, but will not be a part of this Project.

BERLINER COHEN

ATTORNEYS AT LAW

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August 9, 2000

VIA FACSIMILE & U.S. MAIL

U.S. Army Corps of Engineers
Sacramento District Planning Division
Attn: Nina Bicknese
1325 J Street
Sacramento, CA 95814-2922

Re: Draft General Re-Evaluation Report/Environmental Impact Report and Supplemental Environmental Impact Statement for Proposed Modifications to the Guadalupe River Project, Downtown San Jose, California. SCH#199902056.

Dear Ms. Bicknese:

We represent Union Pacific Railroad, which owns property along the Guadalupe River that would be affected by proposed modifications to the Guadalupe River Project between Coleman Avenue and New Julian Street. We have reviewed the draft report on the proposed modifications and would like to enter the following comments into the public record.

Union Pacific is concerned about potential flooding of the properties adjacent to the proposed bypass outlets. We request clarification of Figure 3.4-6, as the perspective of the drawing is unclear, and it is not possible to discern how the flow from each of the outlets would return to the river. Such clarification is necessary to determine the impact on adjacent lands and comply with environmental regulations regarding the project impact and its consistency with the existing approved land uses. We are also concerned because we have heard that changes are being considered to the number of culverts and the location of bypass outlets. We believe that without a precise definition of the physical size and location of the improvements, the project description is inadequate and incomplete. UP-1

The draft report also indicates on page 3-31 that the U.S. Army Corps of Engineers and the Santa Clara Valley Water District are investigating whether the proposed top-of-bank hiking trail will involve an at-grade pedestrian crossing of the reconstructed Union Pacific bridge No. 4 UP-2

or an underground crossing of the bridge. Union Pacific's policy strongly opposes any at-grade pedestrian crossing of a main line right-of-way for safety reasons. Accordingly, you should assume that any such crossing will have to be grade separated. UP-2

Please contact me if you have any questions regarding these comments.

Very truly yours,

BERLINER COHEN

ANDREW L. FABER
E-Mail: alf@berliner.com

ALF:gmb

Cc: Rich Gooch, Union Pacific

BERLINER COHEN, ANDREW L. FABER (AUGUST 9, 2000)

Response to Comment UP-1

The river would be widened to carry the design floodflow of 17,000 cfs, beginning approximately 320 feet upstream from Coleman Avenue (Figure 3.4-6). Therefore, flooding of properties adjacent to the outlets would not occur under the design floodflow.

The box culvert outlets would be constructed within this widened channel area, which is downstream from the existing UPRR No. 3 and No. 4 Bridges. While there may be changes to the physical size or number of culverts, depending on the results of physical modeling, the overall footprint would not change from that described in the Draft EIR/SEIS. The extent or magnitude of environmental impacts would not increase with a change in the physical size or number of culverts. The ability of the channel to carry the design floodflow would also not be affected.

Response to Comment UP-2

The design of the recreational trail system does not propose any at-grade pedestrian crossings at the railroad lines. This will be clarified in the text.

The following change is made to the Draft EIR/SEIS:

Page 3-31. The last paragraph is modified as follows:

> Downstream from New Julian Street to Coleman Avenue, there will be an 18-foot-wide top-of-bank trail. The top-of-bank trail would begin at-grade and cross the reconstructed UPRR No. 4 railroad either via ~~the~~ a bridge over the tracks or as an underground crossing. The final railroad crossing method would be determined in coordination with UPRR. Before Coleman Avenue, there will be a 300-foot-long wheelchair-accessible ramp sloped down the bank to pass under the Coleman Avenue Bridge and connect with the river trail in Segment 2. Upstream from Coleman Avenue, the top-of-bank trail will terminate at grade with the sidewalk, and there will be stairs from the top-of-bank trail to the river trail.

CHAPTER 5

Individuals

NATURAL HERITAGE INSTITUTE
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August 14, 2000

Nina Bicknese
U.S. Army Corps of Engineers
1325 J Street
Sacramento, CA 95814

Re: Draft General Re-Evaluation Report/Environmental Impact Report/Supplemental Environmental Impact Statement for Proposed Project Modifications: Guadalupe River Project (June 2000)

Dear Ms. Bicknese:

I attach comments by Larry Johmann, Associate Director of the Guadalupe-Coyote Resource Conservation District. Mr. Johmann submits these comments in his individual capacity.

We may submit additional comments on behalf of the GCRCD. We request and appreciate your patience, given your August 9 deadline. A serious injury to our consultant, Dr. Li, has delayed submittal of his technical review.

Thank you.

Sincerely,

Richard Roos-Collins / LM
Richard Roos-Collins

Attorney for GUADALUPE-COYOTE RESOURCE CONSERVATION DISTRICT

August 3, 2000

Draft General Re-Evaluation & Environmental Report for Proposed Project Modification
Downtown Guadalupe River Flood Control Project

I have reviewed the above report and offer the following comments:

The report does an excellent job of evaluating and reporting on all of the feasible options for providing flood protection, which satisfies the project's goals in the Contract 3 Reach area. These goals are protecting the area from the 1% or 100 year flood while at the same time attempting to protect environmental interests, such as aquatic resources and riparian areas while addressing the desire for trails and the recreational use of our waterways. It also does an outstanding job of addressing the detailed environmental concerns and studies performed in trying to come up with the best possible solution given the constraints imposed.

It is believed that the proposed project, recommended in the report, is most probably the best possible alternative anyone could possibly hope for given the constraints imposed, limited incised channel capacity and no feasible, cost effective way to provide flood plain relief due to development encroaching on the river.

Unfortunately the report contains some very troubling information. Although it is felt that while doing an excellent job at focusing on the Contract 3 area, problems in other section of the river have not been adequately considered or addressed. In addition, much of the information concerning fisheries, temperature, sedimentation and erosion issues is either inaccurate or based on models and simulations, which do not reflect real conditions. In view of this, it is felt that the entire project will be extremely risky and prone to failure.

Salmonids

The report contains some of the same erroneous information on south bay salmonids as has been continuously published in other documents for at least the past 20 years. There are historic records of steelhead trout and chinook, coho and chum salmon in all area streams as far back as the 1700's when the Spanish first settled the area. The first known records of salmon in the Guadalupe River come from translations of records kept by the Missionary Monks. There are numerous historical records of spring and fall run chinook salmon and fall run chum and coho salmon in our rivers during the 1800's by such noted biologists as Dr. David Starr Jordan. There are also plenty of first and second hand accounts of residents catching coho and chinook salmon in south bay waters including the Guadalupe River watershed throughout the 1900's. In 1995, 1996 and 1997 there were chinook salmon in the Guadalupe River as early as June. It is felt that these fish could have been spring run fish as June seems far too early for fall run fish. Silichip Chinook and the GCRCD have been observing chinook salmon in our rivers for over the past 10 years. JOHMANN-1

The FAHCE effort has documented both adult and juvenile chinook salmon and even a chum salmon in the Guadalupe River in the past few years. In addition, the statements indicating that south bay salmon could be hatchery strays or come from hatchery stock is purely speculative. A 1995 letter from Dr. J. Neilsen to L. Johmann of the GCRCD stated that genetic studies of the 1993 and 1994 Guadalupe River chinook salmon run tissues showed unique DNA markers so they could not be matched with hatchery fish. Top genetics experts in the State categorically state it is presently not possible to genetically trace the origin of chinook salmon at this time. Reference the GCRCD's comments and supporting evidence provided for the FAHCE Document.

The report doesn't take into account the fact that salmonids are in the river at all times of the year. Steelhead or rainbow trout have been observed and caught in the lower Guadalupe River at all times of the year. One man reported catching two steelhead trout just several years ago just above Taylor Street bridge, in an old hole he used to fish as a your boy. The GCRCD and Silichip Chinook observed and photographed a steelhead/rainbow trout living in Los Gatos Creek just up stream of the confluence during the summer months only two years ago. As stated above, chinook salmon have been observed in the river as early as June in three successive years. In other years they start arriving in late August, not October as many experts publications claim. JOHMANN-1

In view of the above, it is felt that our salmonids are special fish and should be recognized and treated as such. Records show salmon were in our streams before the area was settled by the Spanish and there is overwhelming evidence that they were continuously present, although in decreasing numbers, until the late 1980's when the populations started to increase. Therefore, there are as native as the native people that inhabited the area before the Spanish arrived. It is impossible for a fish to stray into the Guadalupe River or any south bay streams, as some would imply. It is a long distance from the north bay to the south bay. The south bay is muddy and shallow and there is nothing to attract the fish to our waterways. They have to fight many adverse conditions to get here. Why would any fish do that when it could take a far more desirable path and a path of least resistance and go up the Sacramento? We believe the answer is clear. They are not strays, they are fighting adversity to return to their birth streams and have adapted or are adapting to conditions in these streams.

Temperature

The report uses a lot of temperature models and tries to make predictions about future post project temperatures based on these models. Unfortunately we have little confidence in these models. Simulated river temperature data such as shown in Section 5 does not agree with measured temperatures from GCRCD temperature data loggers. For example, actual pre project temperatures in Guadalupe Creek are substantially higher than what is shown in the report and temperatures in Segment 3 are somewhat lower than what is shown in the simulations. Why are measured temperatures not shown for current conditions? JOHMANN-2

The report states that there is very limited water temperature data available for the Guadalupe River basin. We disagree. The GCRCD has over 5 years of comprehensive Guadalupe River temperature data and it is known the SCVWD also has temperature loggers throughout the Guadalupe River System. We agree that water temperatures could reach an average or exceed 77 Deg. F in the summer between Almaden Lake & Curtner Ave. where there is little riparian cover. But, downstream of Curtner, to I-880, the riparian habitat is better and temperatures rarely, if ever average higher than about 75 Deg. F. JOHMANN-2

In addition, we know there is up-welling water in the many areas of the Downtown project so there could be cooler pockets in areas that may be negatively impacted by any channel armoring. There are also numerous out fall pipes contributing water to the stream from sump pump stations at lower than normal river temperatures during hot summer months, which probably tends to keep the water cooler than it otherwise would be. Also, we have observed both salmon and steelhead in our streams surviving at temperatures above what most articles indicate is unacceptable for the species. In view of the above, we are very uncomfortable with the temperature predictions being made and also feel the any substantial rise in temperature from current conditions is unacceptable. JOHMANN-3

Sedimentation & Erosion

The report indicates that many comprehensive studies were done using models on pre and post project sedimentation and erosion predictions. Unfortunately it does not indicate that actual field data were collected to show what size sediment is being transported and at what flows. There is no indication that field data for bank and channel erosion have been gathered. JOHMANN-4

The report states that 50,000 tones of sediments are likely to be deposited in the bypassed reaches of the river during the 100 year design flow. In addition, it states that operation of the proposed bypass system would affect sediment transport in Segments 1 and 2 where on an average annual basis almost 25,000 tons of erosion may occur. It further states that under the 100 year designed floodflow the segment of the river immediately below Coleman Ave. where the bypassed flows return to the river, may experience as much as 125,000 tons or erosion or 90 times greater than existing (1999) conditions. This is unacceptable, as it's a prediction of the failure of the overall Downtown project. The report also indicates "site inspections and recent channel cross-section surveys conducted in Segments 1 and 2 confirm that erosion of the natural channel has been occurring in this portion of the river since 1985. We disagree with the 1985 date. Photographs of the area show little, if any erosion, in the area from 1976 until 1995. The area was pretty stable until Sections 1 and 2 of the Downtown project were constructed. It was in 1995, only after project construction, that severe erosion started. JOHMANN-5

In view of the above, it is very obvious that best of intentions and efforts in the Section 3 area will not work. Yes it may pass the design flood flows through the immediate area but the deposition of sediment in the bypassed area will degrade aquatic habitat and eventually

cause flow problems. And worst of all predicted erosion in the Segment 1 and 2 areas will cause severe impacts in those areas and areas downstream where the sediment eroded will fall out decreasing flood capacity and raising flood risk. How can this be justified? JOHMANN-5

Navigation and Recreational Boating

JOHMANN-6

Without an in depth review of the weirs or in stream structures that are proposed as part of this project it is difficult to say if our navigation concern have been satisfied. If the structures have low flow slots as described, then they should be acceptable. We do find that some of the statements in the report, with respect to boating issues, to be somewhat disturbing. The canoe club has boated the river all times of the year, so there is no particular time when it does or does not occur. We have boated the river at estimated flows from about 25 cfs to 5000 cfs. The report talks about structure maintenance at low flows which is a concern. This indicates that there will be need for constant maintenance which is undesirable for any project. The report indicates that boating in urban waters during high flows is unsafe. We believe this to be a very relative statement. Boating in the Guadalupe at any time could be extremely unsafe due to the concrete rubble with protruding rebar, obstructions, shopping carts and other garbage and human waste as well as encounters with vagrant's. We recognize that the dangers drowning due to strainers, reversals and entrapment typically increase with higher flows. However, this is also relative. People without experience or without proper equipment should not attempt to paddle the river at any flow. Teams of expert paddlers with the proper equipment and after taking the proper precautions could paddle the river a high flows with little danger. It is certainly far more dangerous to drive area freeways then paddle the Guadalupe River. The statement that boating in the Guadalupe River Park is discouraged by the City is also an item of concern. The river is a navigable stream and as such people have a right to boat it under California law. The fact that City wants to increase recreational use of Guadalupe River Park, which has a negative impact on the environment but doesn't want people to float the river is inconsistent and hypercritical. Canoeing has little environmental impact. With adequate flows when a canoe passes in the water it leaves no trace. Once on the water it requires no road or path and leave no shoe marks or tire tracks. We fully intend to exercise and protect our rights to paddle our waterways, in the courts, if necessary. JOHMANN-7

In view of the above and the fact that there appears to be little, if any, effort to coordinate the functioning of all of the current and proposed Guadalupe River Flood Control Projects, the entire river will eventually be destroyed by these projects at tremendous cost. Perhaps its time to think out of the box and do something entirely different.

Lets scrap all of the Guadalupe River Flood Control Projects. Lets start at the top of the river and restore the natural channel to the carry the maximum flows possible using geomorphic techniques and low cost natural materials. Restoration funds could be used for this effort and it could be accomplished relatively quickly. Let's limit storm drain outflows to the river, which provide flash runoff and water volumes the river channel can't accommodate. Storm drains often don't function anyway because at high flood flows they are normally under water and this causes local flooding when they back up. Let's route major storm drain pipes directly to bay wetland areas which can accommodate these waters. Use the money slated for armoring the rivers for installing these storm pipes. It shouldn't be too hard to limit flows in the river to acceptable levels via the prevention of flash runoff. Even if such an effort turns out to be a bit more costly up front, it will save tons of money in constant channel maintenance work in the future. Also, if efforts are undertaken to restore or waterways they will satisfy all environmental goals being touted by regulatory agencies and efforts such as the WMI. We also believe people will be willing provide tax dollars for such an effort when they will not approve money for traditional projects. JOHMANN-8

LARRY JOHMANN (AUGUST 14, 2000)

Response to Comment JOHMANN-1

Steelhead and chinook salmon are recognized as occurring in the Guadalupe River (Section 4.6, "Biological Resources – Fish"). The status of both species under the Federal Endangered Species Act is discussed in Section 4.6.2, "Special-Status Fish Species." The impact assessment evaluates project effects on habitat for both species (Section 5.6, "Biological Resources – Fish"), including effects on rearing habitat for juvenile steelhead.

Response to Comment JOHMANN-2

The ability of the temperature model to match measured temperatures is discussed in detail in the preliminary temperature model report (U.S. Army Corps of Engineers, 1999). The Draft EIR/SEIS is modified to summarize the model performance and to describe why preproject temperatures should not be expected to match measured temperatures.

The following changes are made to Appendix 1B of the draft EIR/SEIS.

Page 1B-7. Section 1B.5, "Temperature Simulations," is modified as follows:

> Construction of the Guadalupe River Project would remove riparian vegetation and alter channel geometry, thereby affecting thermal conditions for anadromous fish in the river. Water temperature was simulated using the JSATEMP model. Meteorological conditions, flow, and channel characteristics (e.g., shade and water depth) were used to estimate water temperature in 39 segments of the Guadalupe River system. Figure 1B-3 shows a map of the temperature model segments. ~~Additional information about model assumptions and calibration is presented in a preliminary draft report on the water temperature simulation (Jones & Stokes, 1999).~~The temperature analysis in this report focuses on the four areas expected to have project-related temperature changes: Segment 3 (model segments 30 to 34), Segments 1 and 2 (model segments 35 to 37), Guadalupe Creek (model segments 5 and 6), and Reach A (model segment 38) (Figure 1B-3).
>
> The temperature model performance was evaluated by comparing simulated temperatures for 1996 and 1997 conditions with those measured in 1996 and 1997 by SCVWD. The temperature model performed well; it was able to match the measured diurnal, daily, and seasonal changes in temperature as well as the longitudinal differences in temperature along the length of the Guadalupe River. Additional information about model assumptions and calibration is presented in the preliminary report on the water temperature simulations (U.S. Army Corps of Engineers, 2000d).
>
> To analyze temperature effects, water temperatures were simulated for two types of years, a dry/median year and a wet year. These two types of years were chosen to account for the range of conditions that may occur in the Guadalupe River. 1995 flows were used to simulate the wet year. Relatively low flow values for November through April were used to simulate the

low flow values for November through April were used to simulate the dry/median year. For May through September, median flow values were used for the dry/median year because a flow of 0 cfs would have been required to represent dry years. ~~An~~The flashboard diversion dams MOU (MOU # 0228-97) between SCVWD and CDFG (~~California Department of Fish and Game, 1997~~Santa Clara Valley Water District and California Department of Fish and Game, 1997) requires that ~~SCVWD maintain at least 1 cfs in some locations (i.e., the 1-cfs rule)~~ the release from the Alamitos drop structure on the Guadalupe River maintain a minimum of 1 cfs, as measured at stream gage Station 23B, when the flashboards are in place.

Therefore, 1 cfs was assumed for those locations affected by the 1-cfs rule described in the MOU in the simulated dry/median year. Meteorological conditions used in the water temperature simulation were based on 1994 and 1995 hourly data measured at the California Irrigation Management Information System (CIMIS) station at the San Jose International Airport (located near Reach A) in San Jose.

Temperature was simulated for preproject, postproject, and postmitigation conditions. Preproject conditions are those before any construction. Postproject conditions are those immediately after the construction of the project, and postmitigation conditions are those after mitigation plantings have reached maturity, assumed to occur 40 years after planting.

The simulated temperatures for preproject conditions do not match measured temperatures because the flow and meteorological conditions used in the simulations are different from those present during a particular measurement period. Furthermore, most of the temperatures presented in this report represent averages of multiple temperature model segments and should not be compared to temperatures measured at particular spots along the river.

Temperatures measured between the Alamitos Drop Structure and the Montague Expressway are summarized in Tables 1A-4 through 1A-15 in Appendix 1A of the Draft EIR/SEIS.

Water temperature in the Guadalupe River has been measured extensively.

The following change is made to the Draft EIR/SEIS:

Page 4-52. Section 4.6.3.5, "Water Temperature," is modified as follows:

Based on ~~the limited~~ measured water temperature data available for the Guadalupe River ~~basin~~ for 1996 and 1997 (Appendix 1A), water temperature conditions generally support steelhead and chinook salmon (Figures 4.6-2 and 4.6-3). The recent improvements in fish passage, discussed above under "River Morphology," have increased the amount of suitable habitat available to fish. Most of the streams shown in Figure 4.5-1 are now accessible to adult steelhead and chinook salmon, including reaches with relatively high frequencies of optimal water temperature conditions as measured by SCVWD from September 1995 through November 1997 (Figures 4.6-2 and 4.6-3). Appendix 1A, "Measured Flow and Water Temperature

Data," provides a detailed discussion of measured water temperature conditions and the relationship of these conditions to the needs of chinook salmon and steelhead life stages.

The Draft EIR/SEIS is correct in Section 4.3.3, "Water Quality – Temperature," and in Appendix 1B in Section 1B.5, "Temperature Simulations," in stating that water temperature was not measured extensively prior to September 1995.

Between Curtner and I-880, the average water temperature seldom exceeds 75 °F. These cool temperatures can be seen in the measured data presented in tables 1A-7 and 1A-8 of Appendix 1A of the Draft EIR/SEIS. The simulated preproject temperatures for the project area are also cool (Figures 5.3-2 and 5.3-3 in the Draft EIR/SEIS). Unfortunately, the data initially presented in Figure 4.3-1 of the Draft EIR/SEIS were incorrect and has been corrected. The corrected figure shows that average daily temperatures measured near Coleman in 1996 and 1997 never quite exceeded 75 °F.

The following changes are made to the Draft EIR/SEIS:

Page 4-29. Section 4.3.3, "Temperature," is modified as follows:

> Temperatures were uniformly near or above 20 °C (70 °F) during the months of July through August ~~May through September~~. Temperatures in early spring (March through May ~~April~~) increase steadily from 13 ~~15.5~~ °C to 20 °C (55 ~~60~~ °F to 70 °F) and depend largely on the air temperature, incident solar radiation, and amount of flow in the channel. Water temperatures decrease rapidly in October and November with the onset of cooler ambient temperatures and fewer hours of daylight. Considerably cooler water temperatures in the range of 10 °C to 15.5 °C (50 °F to 60 °F) were typical from November ~~late October~~ through March. Environmental effects of water temperature are addressed in further detail in Section 4.6.3, "Key Factors Affecting Fish and Fish Habitat."

Response to Comment JOHMANN-3

As described in Section 3.4.2.2, "Riverbank and Channel Bed Armoring," the channel bed will be armored in some locations using CCM material. The CCM has about a 20 percent void space and would be placed on a gravel base. It is therefore unlikely that installation of the CCM would substantially alter the flow of water into or out of the shallow aquifer. Additionally, the Bypass System Alternative would not eliminate existing stormwater or other outfalls.

Response to Comment JOHMANN-4

Since preparation of the draft EIR/EIS, the Corps has began a movable bed modeling study of the project. The results of this analysis is presented in the final EIR/EIS (Section 5.2, "River Geomorphology") and in the Response to Comment EPA-12.

Response to Comment JOHMANN-5

The sediment transport continuity study showed that the river has the potential to carry a quantity of sediment in excess of the sediment that is in that particular reach of the river. It does not imply that the river will erode to completely satisfy the river's sediment transport potential. Since preparation of the Draft EIR/SEIS, the Corps has began a movable bed modeling study of the project. The results of this analysis are presented in the final EIR/EIS (Section 5.2, "River Geomorphology") and in the Response to Comment EPA 12.

Although the specific time that significant erosion events occurred in the channel cannot be identified, substantial erosion has probably occurred during the significant flood events, such as the 1986 flood and the 1995 flood. Survey data were available from 1985 and from 1999. Comparison of the survey data indicates substantial channel downcutting. Therefore it was concluded that erosion had occurred during that time period. The information presented was not intended to imply that erosion had been occurring uniformly throughout that period. As mentioned previously, substantial erosion is usually associated with floods. There is additional evidence that concrete rubble was placed at regular intervals in the river as early as the 1960s to prevent channel downcutting that was occurring because of land subsidence in the Santa Clara Valley.

Response to Comment JOHMANN-6

The invert-stabilization-structures will have a low-flow slot that is wide enough to accommodate the passage of watercraft as described in Section 3.4.2.4, "Invert Stabilization Structures." As described in Chapter 5, Section 5.8.3.3, "Boating," the Guadalupe River will continue to be navigable and the Bypass System Alternative will not substantially alter boating opportunities. In addition, the Bypass System Alternative will not affect river hydrology.

Response to Comment JOHMANN-7

Chapter 5, Section 5.8.3.3, "Boating," provides an analysis of the effects of the Bypass System Alternative on boating opportunities. Specific issues relating to use, maintenance, safety, and city policies are addressed below.

As indicated in the text, the period of time the river is not navigable is during very low flows; generally these flows are less than 25 cfs. During very low flows, boaters would have to portage around most riffles and could only float on river pools. The analysis of effects accurately characterizes the period of use and indicates that there will be no substantial change in boating opportunities as a result of the Bypass System Alternative.

Constant maintenance of the low flow channel is not anticipated. As indicated in Chapter 3 of the Draft EIR/SEIS, maintenance of, and sediment removal from, the low-flow channel might be required after 10-year flood events. As indicated in the text in Chapter 5,

maintenance will only occur during very low flows when the Guadalupe River is least likely to be used by boaters.

The safety of boaters using urban waterways is certainly relative to the skill of the boater and the hazards encountered when boating. However, the impact analysis accurately characterizes boating opportunities and, in particular, the potential for boaters to use the river at all but very low flows and the potential for boaters to enter the bypass when flows exceed 1,500 cfs. The impact analysis was also written so as to recognize that boating hazards increase during high-flow events.

The City of San Jose does not explicitly state that the Guadalupe River should not be navigated; however, it prohibits launching boats longer than 16 feet, windsurfers, surfboards, air mattresses, and inner tubes in the Guadalupe River Park (City of San Jose, 1996). There are public health and safety reasons for this type of policy, including minimizing exposure of the public to poor water quality and reducing city liability in the event of injury in the waterway. This policy is not inconsistent with the overall goal of providing enhanced recreational access to the river corridor, because enhanced recreational access is provided to many other types of recreational users.

Response to Comment JOHMANN-8

As indicated in Chapter 2, "Development and Evaluation of Alternative Project Modifications," an extensive screening process was conducted after construction of the Authorized Project was suspended in 1996. The alternatives evaluated in the draft EIR/SEIS are the culmination of that screening process. These alternatives were determined to meet the development and evaluation criteria indicated in Section 2.1.2 and were thus carried forward and evaluated in detail in the Draft EIR/SEIS.

Unfortunately, there is not enough space in the Project Area, due to adjacent urbanization, to provide for a natural channel with adequate capacity. Restoration of an historic, natural channel can also result in substantial loss of adjacent streamside vegetation. For example, a Fluvial Geomorphological Alternative (FGA) was analyzed in the final EIR/EIS for the Upper Guadalupe River Flood Control Project (Santa Clara Valley Water District and U.S. Army Corps of Engineers 2000a). The goal of the FGA was to restore the natural sinuosity of the Guadalupe River channel, enhance sediment transport, and provide for long-term stabilization of the banks by restoring the plan, profile, and geometry of the active channel and incorporating strategically placed rock weirs, root wads, and other appropriate bio-remediation elements including revegetation. The FGA was eliminated from further consideration because: (1) the high cost of construction, (2) substantial impacts to habitats throughout the Project area, especially jurisdictional wetlands, would occur, and (3) the alternative would result in significant impacts to SRA cover, substantial increases in water temperatures, and significant impacts on anadromous fish.

The Corps and SCVWD are in the midst of planning efforts to restore the natural stream channels in the Guadalupe River watershed. These include segments of the upper Guadalupe River and a portion of Guadalupe Creek. The Corps and SCVWD believe that a combination of maintaining and restoring natural stream channels and implementing

physical modifications to enhance the capacity of stream and river channels will best meet the flood protection needs of the Santa Clara Valley and protect and/or enhance fish and wildlife habitat.

FAX 916 557-5138

August 7, 2000

U.S. Army Corps of Engineers
Sacramento District Planning Division
1325 J Street, Sacramento, Ca. 95814-2922

Attention: Nina Bicknese

RE: Draft General Re-Evaluation Report/Environmental Impact Report and Supplemental Environmental Impact Statement (draft report) for Proposed Modifications to the Guadalupe River Project, Downtown San Jose, California (project).

Dear Nina and long-term preparers,

The public hearing of July 26 was a positive testimony to the efforts that have been made by all parties to protect and preserve the Guadalupe River for posterity, and to provide protection from flood for the residents and businesses of San Jose.

It is an exceptional challenge to retain the beneficial instream uses of the river for salmon and steelhead and for the water supply regimen that the Santa Clara Valley Water District must use to replenish the Valley's aquifers, especially in extended seasons of drought, while buffering downtown San Jose against ten, twenty-five and one hundred year floods. There are still aspects of this delicate balance that need some adjustment however, if you will bear with my concerns.

The base flow conditions are not presented in the data as precisely as needed for both scientific and non-scientific evaluation, I feel. (LUCAS-1) The temperature data does not agree with the monitoring reports of the last twenty years that I access from USGS data. (LUCAS-2) The importance of Los Gatos Creek as to both base flow and temperature is not sufficiently evaluated and needs assurance of continuity in a management plan. (LUCAS-3) Los Gatos Creek and its watershed, from a biological resource reference point as well as the dynamics of its flood flows, needs to be included in this EIR. (LUCAS-4)

The original Guadalupe River scoping document outlined a project that could retain two thirds of the natural river streambanks and riparian canopy. Downtown development and freeways reduced this to a third. It is this third, one mile of a three mile natural river system in an urban surroundings environment, that was deemed essential for the integrity of the system, if it was to be preserved. What is not evident in this plan is that assurance of a viable third of the habitat being truly available for refugia for the wildlife over the length of the project. A timeline is needed for what stretch of streambanks will be usable for fish or waterfowl, red-legged frogs or pond turtles for the next ten years, as all three Guadalupe River flood control projects dovetail into each other. (LUCAS-5) Doesn't CEQA have express concerns over piecemealing that relates to cumulative effects that could permanently remove a resource from a river or watershed? Isn't this a prime example of such projects? (LUCAS-6)

There are alternative engineering considerations that should be incorporated into this EIR for maximum cost and environmental effectiveness that I would appreciate discussion on if not inclusion in the 'mitigation' implementation. (LUCAS-7) Thermal and mercury pollution might be minimised? Armoring could include percolation potential? If old bridges are not an impediment to flood flows why not retain them for all aspects of alternative and pedestrian traffic and to keep their historic presence? (LUCAS-8) The USGS gage at St. John Street needs to be preserved to provide historic continuity to Guadalupe River flows and water quality monitoring. It is the base line! (LUCAS-9)

St. John Street and Old Julian were to be preserved and think they are necessary bridges for pedestrian and bike circulation. Has this loss had any public hearing? Should this be submitted to the San Jose planning review as a separate item? (LUCAS-10)

In Chapter 4.1 Hydrologic and Hydraulic Conditions, Table 4.1-3 shows the monthly distribution of Mean Daily Flows in the Guadalupe River at the USGS gage just below the confluence with Los Gatos Creek, with the table computed as the 'percent of mean daily flows less than the indicated amount', from 1954 through 1998.

This is a misleading frame of reference and presented in the most confusing possible mathematical statistical analysis. As mean is the average, one does not readily see the spikes and lows of base flow that determine the survival capability of resident or anadromous fish. My references show 1938-39 to be an entire no flow year. After the reservoirs went in, and in years of light precipitation, half the months were at zero flow. If one calculated the days of no flow that would be an entirely different ratio. Does this data include the 1983-91 IBM/Fairchild cleanup flows to Canoas? If so, this would skew 'mean' data, would it not? (LUCAS-11)

It should also be noted that the cannery activities on the Guadalupe River contributed flows of a sort, if I'm not mistaken. This would not show up on the St. John Street USGS gage but it would supplement flows below this point. (LUCAS-12) In the fall of 1986, 262 potential redds of chinook salmon were noted on the Guadalupe River by California Fish & Game staff, with the greatest numbers downstream of Highway 280, especially in the Taylor Street Bridge reach. It would translate into thousands of fry. (LUCAS-13)

With such a variety of contributing flows it is hard to establish what base flow is essential for the continued survival of the Guadalupe River salmon but it must be addressed in this environmental document. Historically and presently this is a salmon stream and this instream beneficial use needs to be guaranteed. (LUCAS-14)

The short river salmon that have developed unique survival skills since the last ice age, are said to be induced by attraction flows, but also seem to have the instinct to come into San Francisco Bay and to the South Bay rivers as early as mid-August in certain years and quite regularly by mid-September. Sharks have a part of their anatomy that functions as a barometer and salmon may well have a similar built-in reading of an approaching early or late rain or wet year. (LUCAS-15) As their cycle for anadromous survival runs seven years, it is imperative that at least two or three of those years, in concert with favorable weather conditions, be left for them to spawn in sustainable habitat in the Guadalupe. Does this project allow a window of opportunity for accomodating the critical needs of these salmon? (LUCAS-16)

It would be preferable if construction activities in the river were halted when salmon were reported moving up the system. I believe the bridge construction at the airport was conditioned in this way. (LUCAS-17) By the same criteria, if it is a late arrival of the salmon, the November 1 Lexington Reservoir curtailment of flows and the diversions downstream, as at the percolation ponds and Page Ditch and Kirk Dam should be more leniently managed. This fine tuning of some manner of a salmon survival management plan needs to be addressed in this EIR. This 4.1.1.4 section on minimum flow releases is inadequate in this regard. (LUCAS-18)

Los Gatos Creek water supply and flow management is more critical to the salmon survival in the Guadalupe River system and should be continued until an equivalent habitat refugia and water regimen can be realized in Guadalupe Creek. (LUCAS-19) But it cannot be understood what these flows have consisted of in the Table 4.1-3 mean assessment, so there is a critical data gap that needs to be ammended here. (LUCAS-20)

Percolation from upstream sources bubble up into the river bed of the Guadalupe in this downtown reach of the river and some quantification of this form of flow should be included in the minimum flow analysis, along with the substantial outfall flows generated by Caltrans sources and the San Jose Airport pumping. (LUCAS-21)

The gravels of the Guadalupe River between the Blossom Hill drop structure and #280 are highly permeable, so how much base flow is needed in this reach to make the Guadalupe Creek mitigation site accessible to incoming salmon? (LUCAS-22) What months of the year will the Santa Clara Valley Water District guarantee this base flow for fish? (LUCAS-23)

Lastly, in regards base flow, does the appropriation of Bay Delta water for the development of Santa Clara Valley, carry any responsibility for the fisheries of San Francisco Bay and their general wellbeing? The South Bay is considered an incubator or nursery, so Guadalupe River flows and its fishery are an Estuary resource and essential link in the extended food chain, and the Pacific Flyway. LUCAS-24

However, if supplemental flows are ever considered, it is imperative that natural conditions be adhered to in seasonal timing, water temperature and quality, and in low enough flows to simulate wet and dry year cycles. In 4.6.3 Hydrologic and Hydraulic Conditions, the Guadalupe River is called a "flashy" system but the rate of flows referenced are not true to the data. 'Flows during winter and early spring are usually less than 100 cfs (Appendix 1C). Flows during May through October are usually less than 5 cfs.' Appendix 1C I cannot find in Vols. 1, 2 or 3. Flows during May through October are usually zero in the natural system, and any and all extraneous flows need to be assessed as to source, temperature and water quality. If this is not in this EIR it is deficient, and I cannot find it to date. LUCAS-25

The range of winter flows I would like to review in a subsequent 'bulk mail' and do request a continuance in this matter. LUCAS-26 The variability of such flows is unique to the region and its mountain ranges and results in the defining characteristics of the steelhead and salmon that use these rivers. This end of the spectrum of 'base flow' should not be tampered with unduly either if the integrity of the system is to be retained. Table 4.1-2 is the only data I recognize. LUCAS-27

If any mitigation is considered in this area I do request full public review. The most damaging actions in these watersheds have been done under guise of mitigation. LUCAS-28

In regards the thermal implications of this project, I request a continuance, for submittal of my data as well, as I am not comfortable with the Figure 10-1,2,3,4,5 graphs. LUCAS-29 It is the test for survival of this run of salmon in the South Bay if the water temperatures of the Guadalupe River can be held below critical levels before, during and post construction. A 6.5°F increase in the upstream portion of Segment 3B is a cumulative effect that means the demise of this coldwater fishery habitat to my layman's understanding, and a demise of this run of salmon and steelhead. The loss of riparian cover in this area has been avoidable and it is unacceptable to accept this condition at this time as a given. (Table 6.4-1). LUCAS-30

When this project was first authorized by Congress and California Department of Fish & Game had rediscovered the extent of the salmon run of the Guadalupe River, there was no planned disturbance to riparian habitat in the main channel from Balbach to San Fernando, due to the bypass. There were 534 trees in that reach, 97 of them ordinance trees, and there were stands of Fremont cottonwoods and Sycamores between Park and San Fernando. If mismanagement of the activities that have been permitted on the river in the intervening years have been avoidable, in light of the approved flood control project design, then there is a culpability that demands compensatory action even if it results in cooling refrigeration coils sunk into the armored river bottom. Please re-evaluate Segment 3B. LUCAS-31

There are other measures that could be taken upstream, like replanting the trees that were removed at the installation of the fish ladder in the Blossom Hill drop structure, and making all percolation ponds and flashboard dams offstream. The offstream ponds could be shaded from heat of day and afternoon sun by trees on the western shore especially. Guadalupe Creek has very high thermal impacts when it passes through the percolation area upstream of Almaden Expressway but to remove that water supply element entirely should be the very last resort. LUCAS-32

The downstream of #280 Segment 30 armored river bottom and bank is another prime example of the natural river being manhandled. The stand of 150-200 year old oaks that were removed for the Woz Way bridge, the design of the bridge and the intrusion of the river walk into the center of the stream has all resulted in the destabilization and washout of a prime riparian resource. This needs a second Rosgen LUCAS-33 opinion. The river walk should be recontoured and the eastern bank replaced to at least a portion of its lush riparian foliage. It was this rich canopy that gave shade to a prime riffle and holding pool sequence for the steelhead and salmon, and screened the city parking garage and parking lots from the Children's Discovery Museum. The western bank is eroded and the entire region seems quite destabilized. From cool and serene the bank is now going to be widened to the east and encased in hot rock? This is the opposite of what is needed. Please consider an alternative. LUCAS-33

Alternative engineering methods in this 'natural' part of the approved Guadalupe River flood control project should not imply diminished hydrologic certainty. The location of the bypass is best served if the original curve of the eastern bank is not altered or extended? LUCAS-34 The river walk should be pulled out of the mainflow of the center of the river? It regularly loses all plantings in its gabion terraces anyway, and it is dangerous to encourage children down into a swift flow region. LUCAS-35

It is regrettable that when so much is known about good engineering that bridges that are being put in are so harmful to the rivers they intercept. If one observes the railroad bridges that were built in the last century (except for the ones in the project area) they usually pass low and flood flows equally well. One presumes the engineers got cleverer as they moved across the country with western expansion. The Woz Way Bridge should probably not extend over the eastern bank as it does? Can this construction be reviewed? LUCAS-36

By the same token, the replacement of the Kirk Dam on Los Gatos Creek did not seem to be as cleverly slanted as it had been originally. In my belated packet I will enclose pictures of a wier on the Arno River that is dramatically sloped dowstream at the outer curve with a sluice gate on the outside of the curve. Kirk Dam has its gate on the inside and is at right angles to the stream. Can this contribute to or at least not diminish a hydraulic jump? It should be noted that the 1995 flood of the downtown was due to a spike in the Los Gatos Creek flow and some analogy made as to the cause or possible remediation. LUCAS-37 Placing all percolation facilities offstream should also be in the discussion of the Los Gatos Creek 1/3 contribution to Guadalupe flood flows, and also its contribution to the base flow. LUCAS-38

The mitigation plantings in the bypass in the Coleman to #880 segments are not in kind, if somewhat in place. They are not on a west bank that provides a mile of refugia for an anadromous coldwater fishery in a stream with gravels that enjoy a bubbling-up of underground flows throughout even the hottest of summers. The soil that has encased the mitigation site is poor and the water regimen not equal to a natural system. LUCAS-39

Reach A, from #880 to Brokaw is almost nonexistent as #87 needs every square inch on the eastern bank for their own mitigation and the airport frontage road is expanding onto the western bank. This was habitat for the western pond turtle. How much mitigation is anticipated here? LUCAS-40

Guadalupe Creek is too warm and will be for some time, and with continuous flood projects in process from here to the Bay for the next decade it is not a very promising home for an anadromous salmon or steelhead. I have little confidence in it. LUCAS-41

Los Gatos Creek appears to me to be the only hope for the coldwater fishery in this watershed and I appeal to you to declare a moratorium on any activity that removes so much as a branch of a tree from the Los Gatos riparian corridor. There was talk of a trail taking out 'poor' trees near Lincoln. Please rescind such plans. LUCAS-42

This is a poor first draft of all that I would like to say, as interruptions teem. Please try to occasionally let the Guadalupe River teem again with salmon.

Sincerely, Libby Lucas

Libby Lucas, 174 Yerba Santa Ave., Los Altos, CA 94022

LIBBY LUCAS, LOS ALTOS, CALIFORNIA (AUGUST 7, 2000)

Response to Comment LUCAS-1

The flow information in Table 4.1-3 is presented for information purposes and characterizes the seasonal variability of flows in the Guadalupe River. Because the Bypass System Alternative is a flood protection project that does not affect the volume of water that flows into or out of the channel under low flow conditions, no additional data on flows was included.

Response to Comment LUCAS-2

The data presented in the report should not be expected to match the temperatures measured by the USGS at USGS Station 11169000 (Guadalupe River at San Jose, downstream from the Los Gatos Creek confluence). Both the simulated and measured temperatures presented in the Draft EIR/SEIS are continuous strings of hourly values. The USGS measurements were made only intermittently (usually once a month). Furthermore, most of the temperature values presented in the report are for areas other than model segment 33 where the USGS station is located.

Response to Comment LUCAS-3

Low-flow information from Los Gatos Creek is not necessary for the hydraulic and hydrologic evaluations of the Bypass System Alternative because the Bypass System Alternative does not alter the flows in the river or Los Gatos Creek. Low-flow and temperature information regarding Los Gatos Creek was considered in the temperature model.

Response to Comment LUCAS-4

Los Gatos Creek is included in the description and analysis of hydrologic and hydraulic conditions of the Guadalupe River watershed (Section 4.1, "Hydrologic and Hydraulic Conditions," and Section 5.1, "Hydrologic and Hydraulic Consequences"). Los Gatos Creek flows are included in the calculation of the design flood (Section 4.1.1.6, "Calculation of the Design Flood"). Information regarding fisheries in Los Gatos Creek is included in the description of fisheries resources in the Guadalupe River watershed (Section 4.6.2, "Special-Status Fish Species"). The operation of Lexington Reservoir, Vasona Reservoir, and percolation ponds on Los Gatos Creek is included in the Guadalupe River watershed analysis being conducted by the FAHCE initiated jointly by SCVWD and CDFG (Section 6.2.1.10, "Related Projects in the Guadalupe River Watershed").

Response to Comment LUCAS-5

Chapter 6, "Cumulative Impacts and Other Required Analyses," discusses the cumulative effects of past, present, and reasonably foreseeable projects in the Guadalupe River watershed. The Upper and Lower Guadalupe River Projects and the Guadalupe River Project with Bypass System Alternative are analyzed, as well as other projects in the Guadalupe watershed. Substantial habitat on the Guadalupe River will be available as refugia during construction of the proposed flood-protection projects. Construction of the Guadalupe River Project with Bypass System Alternative is expected to occur during 2002 to 2004. Construction of the Lower Guadalupe River Project is expected to occur during 2001 to 2002. Construction of the Upper Guadalupe River Project is expected to take place over the 25-year period from 2000 through 2025. Segments 1, 2, and 3 of the Guadalupe River Project with Bypass System Alternative total approximately 2.25 miles. During 2002 to 2004, approximately 1.0 mile out of 2.25 miles of the Guadalupe River Project with Bypass System Alternative will remain available as refugia and a total of 4.7 miles out of 6.4 miles of the Upper Guadalupe River Project will remain available as refugia. In addition, passage improvements made as part of the Upper Guadalupe River Project would provide access for migratory fish to approximately 10.9 miles of upstream fish habitat on Alamitos Creek and Arroyo Calero. The sequence of construction of the Lower Guadalupe River Project is not known at this time.

All of the riparian vegetation mitigation for the Guadalupe River Project with Bypass System Alternative has been planted. Therefore, 100 percent of the proposed riparian vegetation mitigation has occurred prior to 50 percent of the total impact on riparian vegetation. The Upper Guadalupe River Project includes establishment of 65 percent of the proposed vegetation riparian mitigation prior to 4 percent of the impacts. The timing for riparian habitat mitigation for the Lower Guadalupe River Project is not known at this time (Section 6.2.5.1, "Riparian Vegetation").

For the Upper Guadalupe River Project, 92 percent of the proposed SRA cover vegetation mitigation will be established before 9 percent of the project's impacts on SRA cover vegetation occurs. For the Guadalupe River Project with Bypass System Alternative, approximately 100 percent of the proposed SRA cover vegetation mitigation will be established before 51 percent of the project's impacts on SRA cover vegetation occur. The two projects combined, will more than double the SRA cover vegetation along the Guadalupe River compared with existing conditions. The potential impacts of the Lower Guadalupe River Project on SRA cover vegetation cannot be determined at this time (Section 6.2.5.2, "SRA Cover Vegetation").

Response to Comment LUCAS-6

In considering whether an activity is a "project" or "Bypass System Alternative" under CEQA and NEPA, an agency must look at all of the parts, components, and phases of the activity. An agency is generally not permitted to segment or piecemeal a project into small parts if the effect is to avoid full disclosure of environmental impacts. Therefore, an agency may not treat interrelated actions as separate projects for purposes of avoiding preparation

of an EIR or EIS. CEQA requires a lead agency to study the environmental effects of "The whole of a project." [Pub. Res. Code Sec. 21065; Guidelines Sec. 15378(a)] NEPA applies to Federal discretionary decisions, considered "Bypass System Alternatives" and all "connected actions." [40 C.F.R. 1502.4(a), 1508.25(a)].

This rule against segmenting does not, however, mean that several activities that have overlapping environmental effects must be included in a single CEQA or NEPA document. The courts under CEQA and NEPA have recognized a variety of exceptions to the segmenting rule. In general, the environmental review for a project can move forward without combining the analysis of another project in the same document when:

- the study for the project is being performed at a time when meaningful information about another project is not obtainable;
- an intelligent decision about the project being studied can be made without information about another project; or
- approval of the project being studied does not commit to the implementation of another project.

The Lead Agencies did not segment or piecemeal the Guadalupe River Project from the Upper and Lower Guadalupe River Projects to avoid preparing an EIR/EIS. The Lead Agencies, in fact, have prepared a separate EIR/EIS analyzing the environmental effects of the Upper Guadalupe River Project and are preparing an EIR/EIS on the Lower Guadalupe River Project.

Each of these projects was initiated at a different time. The Corps' 1985 Guadalupe River Interim Feasibility Report and EIS (Section 1.6.1, Guadalupe River Interim Feasibility Report and Environmental Impact Statement [1985]) did not find economic justification for proposed channel modifications upstream from I-280. SCVWD, in the late 1980s, initiated an independent planning study for the Upper Guadalupe River Project. Planning and design of the Upper Guadalupe River Project continued concurrently with construction of Segments 1 and 2 of the Authorized Project. In 1997, SCVWD and the Regulatory Branch of the Corps, San Francisco District, prepared a draft EIR/EIS for the Upper Guadalupe River Project. A final EIR/EIS was issued in July 2000.

In 1985, during the planning and design of the Guadalupe River Project, it was understood, based on the best available information, that the lower Guadalupe River had adequate capacity to safely convey the 100-year design floodflow of 17,000 cfs. After the January and March 1995 storm events on the Guadalupe River, SCVWD initiated studies to reassess the conveyance capacity of the lower Guadalupe River. In 1998, SCVWD completed the analysis and concluded that the lower Guadalupe River below I-880 does not have sufficient capacity to convey the 100-year design floodflow of 17,000 cfs. SCVWD is developing the Lower Guadalupe River Project to restore the channel capacity between I-880 and the Alviso UPRR Bridge and to identify alternatives for conveying floodflows downstream from the Alviso UPRR Bridge.

The Guadalupe River Project, therefore, was initiated at a time when meaningful information was not obtainable for the Lower Guadalupe River Project. In addition, the Lead Agencies determined that an informed and intelligent decision about the Guadalupe

River Project could be made without the site-specific information about the Lower Guadalupe River Project.

The Lead Agencies also determined that an informed and intelligent decision about the Guadalupe River Project could be made without the site-specific information about the Upper Guadalupe River Project. In addition, the Lead Agencies determined that approval of the Guadalupe River Project would not commit the Lead Agencies to the implementation of the Upper Guadalupe River Project.

It should be noted that the Guadalupe River Project Draft EIR/SEIS included a watershed impact analysis, necessarily incorporating the effects of the Upper Guadalupe River Project, where appropriate, and the Lower Guadalupe River Project, where known. The hydrologic, hydraulic, temperature, and fish analyses in Chapter 5, "Environmental Consequences," of the draft EIR/SEIS included analyses from a watershed perspective. In addition, the cumulative effects of the Upper and Lower Guadalupe River Projects and the Guadalupe River Project with Bypass System Alternative are addressed in Chapter 6, "Cumulative Impacts and Other Required Analyses." The interrelated effects of the Upper and Lower Guadalupe River Projects and the Guadalupe River Project are assessed in Chapter 6 using the best information available. The adaptive management approach proposed in the Draft EIR/SEIS and MMP (Volume 2, Appendix 3) will ensure that an ongoing comprehensive watershed management approach is implemented. The environmental documents prepared for the Upper Guadalupe River Project include a comprehensive cumulative effects analysis. The environmental document for the Lower Guadalupe River Project will also include a comprehensive cumulative effects analysis.

Response to Comment LUCAS-7

As described in Chapter 2, "Development and Evaluation of Alternatives Project Modifications," numerous flood protection alternatives have been considered since construction of the Authorized Project ceased. The Corps and SCVWD believe that the Bypass System Alternative provides the best opportunity to enhance fish and wildlife, while meeting the project objectives.

Alternatives and project modifications dealing with mercury are discussed in greater detail in Responses to Comments EPA-4 and EPA-5. In summary, the Corps and SCVWD are proposing specific measures to minimize mercury impacts, including construction soil management, operational maintenance sediment management, control of stagnant pools, and possibly sediment detention traps.

Response to Comment LUCAS-8

St. John Street Bridge at the Guadalupe River will not be removed as part of the project. However, the West (Old) Julian Street bridge will be removed as part of the project. This bridge is believed to be an impediment for floodflows. In addition, below this bridge is an existing utility has become exposed that is a potential barrier to fish passage during very

low flows. The project will demolish the West (Old) Julian Street bridge, remove this fish barrier, and plant the resulting banks with native plantings.

Response to Comment LUCAS-9

Replacement of the USGS gage at St. John Street would not adversely affect the hydrologic record. The new gage would be constructed in the vicinity of the existing gage.

Response to Comment LUCAS-10

The St. John Street Bridge will be retained as a vehicular and pedestrian bridge. The Old Julian Street Bridge, which is now closed, will be removed. These decisions were based primarily on hydraulic and environmental considerations and the specific recommendations of the City of San Jose. The closure and removal of the Old Julian Street Bridge were addressed in the previous environmental documents for the Guadalupe River Project and the Guadalupe River Park Project. Figure 3.4-9, "Existing and Proposed Recreation Components," in the Draft EIR/SEIS shows numerous other routes for pedestrian and bike circulation.

Response to Comment LUCAS-11

The flow information presented in Table 4.1-3 is presented for information purposes only to characterize the seasonal variability of flows in the Guadalupe River. Data from before 1954 were excluded from this table because the construction of the reservoirs has substantially altered the low-flow conditions. The discharges to Canoas Creek are included in this table. The data do not skew the mean daily values. Rather, it affects the distribution of mean daily flows that have occurred in the river.

Response to Comment LUCAS-12

Additional inflows to the Guadalupe River from various commercial, industrial, and storm water discharges occur below the St. John Street gage. Because the Bypass System Alternative is a flood protection project that does not affect the volume of water that flows into or out of the channel under low flow conditions, no additional data is needed for evaluation of project effects.

Response to Comment LUCAS-13

Chinook salmon are recognized as occurring in the Guadalupe River (Sections 4.6.1 and 4.6.2). The primary spawning area is identified as "in and around downtown San Jose,"

consistent with the California Department of Fish and Game observation that the greatest number of redds occur downstream from Highway 280.

Response to Comment LUCAS-14

The hydrology of the Guadalupe River is discussed in Section 4.6.3.1, "Hydrologic and Hydraulic Conditions," and measured flows are provided in Appendix 1C. The construction and operation of the Bypass System Alternative would not affect base flows.

Response to Comment LUCAS-15

Based on available data (Section 4.6) and conversations with SCVWD fish biologists, most adult chinook salmon are expected to migrate through the downtown river segment after September.

Response to Comment LUCAS-16

The Bypass System Alternative will not have a significant adverse effect on spawning migration by adult chinook salmon. As stated in Section 5.6.4.1, the Bypass System Alternative would benefit passage of adult chinook salmon through relocation and modification of barriers and improved access to upstream spawning and rearing habitat. The Bypass System Alternative also provides for fish passage to occur at flows as low as 1 cfs.

Construction area management, as described in Chapter 3, would avoid and minimize possible migration delays caused by cofferdams and flow bypasses around construction sites. The construction area management requirements recognize potential occurrence of adult chinook salmon prior to October and identify actions to provide passage when needed for fish arriving as early as September 1.

Response to Comment LUCAS-17

As described in the discussion of construction-area fish management in Section 3.4.3, "Environmental Commitments," in-channel construction, including riverbank and channel bed construction, would be limited to the summer low-precipitation period (April 15–October 15). If necessary, upstream passage for adult chinook salmon would be provided through or around construction sites from September 1 through October 15. The need to provide passage would be based on the presence of adult chinook salmon, flow conditions, and cooperative assessment of passage needs by NMFS, SCVWD, the Corps, and CDFG. Construction outside the summer low-precipitation period would require additional approval from CDFG and NMFS.

Response to Comment LUCAS-18

Section 4.1.1.4, "Minimum Flow Releases," is a general description of the present guidelines followed by SCVWD for flow releases in the Guadalupe River watershed. Potential changes to these guidelines are beyond the scope of this project. The operation of Lexington Reservoir, Vasona Reservoir, and percolation ponds on Los Gatos Creek is included in the Guadalupe River watershed analysis being conducted by the FAHCE initiated jointly by SCVWD and CDFG. In addition, SCVWD's Guadalupe Fisheries Management Plan, which SCVWD intends to prepare and implement, will include Los Gatos Creek in its assessment of management options (Section 6.2.1.10, "Related Projects in the Guadalupe River Watershed").

Response to Comment LUCAS-19

Existing Los Gatos Creek water supply and flow management operating procedures are expected to continue during the implementation of the Guadalupe Creek Restoration Project and the construction of the Guadalupe River Project with Bypass System Alternative subject to the results of the FAHCE process. See Response to Comment LUCAS-18.

Response to Comment LUCAS-20

Because the Bypass System Alternative is a flood protection project that does not affect the volume of water that flows into or out of the channel under low-flow conditions, no additional data are required for evaluation of effects. Additionally, the Bypass System Alternative does not provide for instream flow releases.

Response to Comment LUCAS-21

Because the Bypass System Alternative is a flood-protection project that does not affect the volume of water that flows into or out of the channel under low-flow conditions, more data are not needed for evaluation of project effects. Because the project does not include modifications to reservoir-operating rules for either flood protection or supplemental flows for habitat improvements, the Draft EIR/SEIS does not include an analysis of low flows. The reservoir release information, presented in Section 4.1.1.4, "Minimum Flow Releases," was provided to help characterize the modifications to the natural flow regime that has occurred due to the development of the Santa Clara Valley.

As described in Response to Comment JOHMANN-3, concrete cellular mattress material, with an approximate void space of 20 percent, would be used for channel armoring. This material would allow for interaction between groundwater and the river. Additionally, the Bypass System Alternative would not eliminate existing stormwater or other outfalls.

Response to Comment LUCAS-22

When Guadalupe Creek was evaluated as a potential mitigation site by the HEP team, one of the key issues was fish passage. The accessibility to Guadalupe Creek was verified by analysis of the frequencies of historic flows during the period 1973 to 1995. These historic flows included losses due to percolation. Fish have been observed to successfully pass the new fish ladder, constructed at the Alamitos drop structure, and have access to Guadalupe Creek, as indicated in Section 4.6.3.3, "River Morphology." The Corps' environmental consultant, Jones & Stokes, and SCVWD fisheries biologists surveyed the Guadalupe River for barriers to fish passage in 1997 and 1998, including the area from Trimble Road to the Alamitos drop structure on the Guadalupe River and from Almaden Expressway to Masson Dam on Guadalupe Creek. An existing USGS gaging weir upstream from St. John Street was identified as a potential barrier to fish passage and will be relocated and reconstructed to allow for fish passage (Section 3.4.2.7, "USGS Gaging Station Replacement"). In addition, exposed gas and sewer lines cross the river 150 feet upstream from UPRR No. 4 Bridge; they are encased in a concrete enclosure 4.5 feet wide by 3 feet high. Because this enclosure might act as a barrier to fish at low flows, it will be relocated under the riverbed using a sewer siphon system. Guaranteed flows are therefore not needed for access to Guadalupe Creek.

The operation of SCVWD reservoirs and potential base flow needs are included in the Guadalupe River watershed analysis being conducted by the FAHCE initiated jointly by SCVWD and CDFG. In addition, SCVWD's Guadalupe Fisheries Management Plan, now in the early planning stages, will include the assessment of reservoir management options. As indicated in Section 1.4 in the MMP (Volume 2, Appendix 3):

> Nothing in this MMP requires, or should be interpreted as requiring, SVWD to modify its current water supply operations or SCVWD or the Corps to undertake water augmentation actions, except that the Adaptive Management team may consider and implement such remedial action pursuant to Section 3.3 and Chapter 4. The ongoing FAHCE program will address the potential for changes to SCVWD's current water supply operations.

Response to Comment LUCAS-23

See Response to Comment LUCAS-22.

Response to Comment LUCAS-24

SCVWD receives water from the Bay-Delta from the State Water Project and Central Valley Project. These supplies are used for agricultural, municipal and industrial, recreational, environmental, groundwater percolation, and other beneficial uses in Santa Clara County. Both the State Water Project and Central Valley Project are operated to meet current SWRCB Bay-Delta water quality standards and other regulatory requirements, including applicable protections for endangered species. In addition, Federal statute (the Central Valley Project

Improvement Act or CVPIA) has dedicated 800,000 af of Central Valley Project yield to environmental mitigation, restoration, and enhancement. The CVPIA also established a Restoration Fund, into which SCVWD contributes up to $2 million annually. SCVWD has actively participated in the CALFED Bay-Delta process, and voluntarily contributed $1 million to the Category 3 fund for habitat restoration projects. These funds may be used for projects in Santa Clara County that improve fisheries in San Francisco Bay.

Regarding the release of water from SCVWD reservoirs, SCVWD is an active participant in the FAHCE. The FAHCE process will identify factors limiting steelhead and chinook salmon populations in the Guadalupe River, Coyote Creek, and Stevens Creek watersheds. Both flow and nonflow measures will be considered by the FAHCE. In addition, SCVWD intends to develop a Guadalupe Fisheries Management Plan that will include a comprehensive management plan to preserve, protect, and enhance the fishery and aquatic resources of the Guadalupe River and those tributaries capable of supporting or contributing to these resources (Section 6.2.1.10, "Related Projects in the Guadalupe River Watershed").

SCVWD's responsibility to the well being of the fisheries of San Francisco Bay is pertinent SCVWD Board policy.

Section 2 of SCVWD Board Policy E1 states:

2. There is an enhanced quality of life in Santa Clara County.

2.1. Watersheds, streams, and the natural resources therein are protected and when appropriate, enhanced or restored.

2.1.1. Healthy creek and bay ecosystems are protected, enhanced, or restored as determined appropriate by the Board.

2.1.1.1. Mitigation for the adverse impacts of District activities are identified.

2.1.1.2. Opportunities to enhance or restore natural resource benefits of streams and watersheds are identified.

2.1.1.3. Mitigation, enhancements, or restorations are implemented when determined appropriate by the Board.

Response to Comment LUCAS-25

The Bypass System Alternative does not include supplemental flow releases from SCVWD reservoirs. For clarification purposes, Table 4.1-3 shows that the mean daily flows from May through October are less than 5 cfs approximately 70 percent of the time. During the winter months of November through April, the mean daily flow is less than 100 cfs 70 percent of the time. Further described in Section 4.1, "Hydrologic and Hydraulic Conditions," the flows in the Guadalupe River are far from natural. Because the Bypass System Alternative would not affect low flows, it is not necessary to quantify or evaluate the sources that make up the low flows. Appendix 1C is in Volume 2.

Response to Comment LUCAS-26

Please see subsequent letter received from Libby Lucas on August 14, 2000 (Comment letter LUCAS-2) and accompanying responses.

Response to Comment LUCAS-27

The hydrology of the Guadalupe River is discussed in Section 4.6.3.1, and measured flows are provided in Appendix 1C. Construction and operation of the Bypass System Alternative would not affect base flows.

Response to Comment LUCAS-28

No mitigation for the effect of constructing Guadalupe River Project with Bypass System Alternative is proposed to occur between the Alamitos drop structure and I-280. The Upper Guadalupe River Project is proposing mitigation in this area (Section 6.2.1.7, "Upper Guadalupe River Flood Control Project").

Response to Comment LUCAS-29

Please see subsequent letter received from Libby Lucas on August 14, 2000 (Comment letter LUCAS-2) and accompanying responses.

Response to Comment LUCAS-30

To address the comment regarding the potential demise of coldwater fishery habitat in the Guadalupe River, the following is a summary of information included in the Draft EIR/SEIS regarding water temperature effects on chinook salmon and steelhead migration, spawning, and rearing resulting from the Guadalupe River Project with Bypass System Alternative and other projects in the Guadalupe River watershed.

Migration of juvenile and adult anadromous fish peaks during late fall, winter, and early spring (Section 4.6.2, "Special-Status Fish Species") when the Guadalupe River Project with Bypass System Alternative and other projects in the Guadalupe River watershed would have little effect on water temperature. Postproject and postmitigation water temperatures as a result of the Guadalupe River Project with Bypass System Alternative and other projects in the Guadalupe River watershed from November through February would be similar to those existing under current conditions (Section 5.3.3.4, "Water Temperature;" Section 5.6.4.1, "Adult and Juvenile Anadromous Fish Migration;" and Section 6.2.4.4, "Temperature"). Water temperatures during the anadromous fish migration period would

be within the range that would support migration of adult and juvenile chinook salmon and steelhead.

Steelhead and chinook salmon generally spawn between November and February, although chinook salmon may spawn as early as October and steelhead may spawn as late as May (Section 4.6.2). Under existing water temperature conditions (Section 4.3.3), successful steelhead spawning is limited to January and February, and successful spawning of chinook salmon is limited to November or later. Postproject water temperatures from November through February, as a result of implementation of the Guadalupe River Project with Bypass System Alternative and other projects in the Guadalupe River watershed, would be similar to those of preproject conditions (Section 5.3.3.4; Section 5.6.4.2, "Anadromous Fish Spawning and Incubation"; and Section 6.2.4.4) and have minimal effect on spawning success.

Juvenile chinook salmon rear in the Guadalupe River from February to June (Section 4.6.2), and most juveniles probably migrate from the river prior to May. Postproject simulated water temperatures from March to May for the Guadalupe River Project with Bypass System Alternative and other projects in the Guadalupe River watershed are within the range that would support rearing of juvenile chinook salmon (Section 5.3.3.4; Section 5.6.4.3, "Resident and Anadromous Fish Rearing"; and Section 6.2.4.4).

Juvenile steelhead rear in the Guadalupe River from March through October (Section 4.6.2).

Cumulative postproject increases in water temperature of 6.5 °F in the upstream portion of Segment 3B are the maximum increase expected and would occur in August. This increase would not be expected to significantly affect the abundance and distribution of steelhead in the Guadalupe River system for several reasons:

- Water temperature during the summer would be within the range that would support rearing of juvenile steelhead.
- Juvenile steelhead could move, relocating from warm areas in Segments 1, 2, and 3 to habitat with more suitable water temperatures, including deeper pools and local areas of cool water inflows in Segments 1, 2, and 3 and cooler upstream reaches and tributaries.
- The recent improvements in fish passage, discussed in Section 5.6.4.1, "River Morphology Effects," will increase the amount of suitable habitat available to fish in the upper Guadalupe River watershed areas. These areas are accessible to adult steelhead and chinook salmon and usually have water temperature conditions that are optimal for sensitive life stages.

Postmitigation water temperatures of the Guadalupe River Project with Bypass System Alternative and Upper Guadalupe River Project would improve habitat conditions for chinook salmon and steelhead (Figures 6.2-4 and 6.2-5). The postmitigation water temperatures in the Upper Guadalupe River Project area would be below preproject levels. The postmitigation cooling of water temperatures in the Upper Guadalupe River Project area would extend into the area of the Guadalupe River Project with Bypass System Alternative. SRA cover vegetation planted in Segments 1 and 2 of the Guadalupe River Project and in Reach A would cool water temperatures in Reach A to lower than preproject conditions. SRA cover vegetation planted as part of the Guadalupe Creek Restoration

Project would also cool water temperatures and improve habitat conditions for steelhead and chinook salmon compared to preproject conditions, although the effects would be limited to Guadalupe Creek. Under postmitigation conditions, the long-term cumulative effect of the Guadalupe River Project with Bypass System Alternative and the other major projects in the Guadalupe River watershed on water temperatures would be to benefit anadromous species in Guadalupe Creek and in the Guadalupe River (Section 6.2.7, "Cumulative Impacts on Fish").

Response to Comment LUCAS-31

In Segment 3B, located between New Julian Street and Park Avenue, the Authorized Project (1992) included widening the eastern bank from New Julian Street to just downstream from Santa Clara Street and installing armoring near the confluence of Los Gatos Creek and the New Julian Street and Santa Clara Street bridge crossings. From Santa Clara Street to Park Avenue, the Authorized Project included constructing retaining walls and armoring along the eastern and western banks and the channel bed (Figure 1.1-1). The Bypass System Alternative avoids the east bank widening from New Julian Street to just downstream from Santa Clara Street because of the proposed bypass system. The Santa Clara Street to Park Avenue portion of the project is similar to the Authorized Project. The Bypass System Alternative avoids removing approximately 975 lf of SRA impacts compared to the Authorized Project.

Response to Comment LUCAS-32

Most of the suggested measures have been implemented or are proposed. SCVWD has constructed a fish ladder at the Alamitos drop structure upstream from Blossom Hill Road. Nine trees and 82 lf of SRA cover vegetation were affected by the project. Project impacts have been mitigated directly upstream; the mitigation included planting 18 trees to create a minimum of 82 lf of SRA cover vegetation (Section 6.2.1.5, "Santa Clara Valley Water District Fish Ladder Construction Program"). SCVWD has also committed to cease construction and operation of instream spreader dams in Guadalupe Creek in the Guadalupe Creek Restoration Project area (Section 6.2.1.10, "Related Projects in the Guadalupe River Watershed").

Response to Comment LUCAS-33

The eastern bank between I-280 and Woz Way will be recontoured and armored as part of the Bypass System Alternative. This is required based on the results of hydraulic modeling performed by the Corps. The hydraulic model indicates that channel bed and bank hardscaping is required based on flow velocities in Segment 3C. This hardscaping will also serve to protect the I-280 bridge piers from channel incision.

Alternative project designs for the west bank immediately downstream from Woz Way have been considered; however, no biotechnical bank stabilization methods can be implemented at this location due to water velocities. The Children's Discovery Museum SRA cover vegetation mitigation site was implemented in 1998 to restore the eroded bank and serve as an infill mitigation planting site.

Response to Comment LUCAS-34

See Response to Comment LUCAS-33.

Response to Comment LUCAS-35

Environmental and social effects, including public safety issues, of the riverwalk trail in the Woz Way Bypass area were addressed in the 1989 Guadalupe River Park Master Plan EIR (Section 1.6.2, "Guadalupe River Park Environmental Impact Report"). See Response to Comment LUCAS-33.

Response to Comment LUCAS-36

Construction of Woz Way Bridge is not included in Project. The bridge was constructed by the City of San Jose in the 1980s with pertinent permits from regulatory agencies. The river channel at the bridge location has sufficient capacity to convey a 1 percent floodflow.

Response to Comment LUCAS-37

The Bypass System Alternative does not include modifications to existing SCVWD dams and reservoirs. Changes in operations or configuration of the Kirk Dam outlet works are not part of this project and are not evaluated in the Draft EIR/SEIS. If at some future date SCVWD wishes to implement such a project, environmental compliance documents would be completed at that time.

Response to Comment LUCAS-38

The Bypass System Alternative does not include modifications to existing SCVWD percolation operations. Because the Bypass System Alternative does not modify the flows in the Guadalupe River, detailed analysis of the low flow conditions was not conducted.

Response to Comment LUCAS-39

The existing riparian vegetation is located primarily from the river's edge to the tops of the banks and includes the portion of the existing riparian habitat that projects over the water surface (i.e., SRA cover vegetation).

Impacts on SRA cover vegetation are fully mitigated by SRA cover plantings located onsite in Segments 1–3 and offsite in Reach A and Guadalupe Creek. SRA cover plantings will be located along 22,892 lf of riverbank in a 15-foot-wide planting area (7.9 acres total). These planting areas will provide additional canopy acreage as the vegetation matures.

Impacts on riparian vegetation are fully mitigated by planting 21.0 acres of riparian vegetation in the floodway in Segments 1 and 2. Although these plantings are not located on the riverbanks, they will provide additional riparian habitat and increase the width of the riparian corridor in the floodway between Coleman Avenue and I-880.

Response to Comment LUCAS-40

SRA-mitigation plantings in Reach A will be located within 15 feet of the river's edge. Caltrans indicated that their mitigation plantings would ~~not~~ be located no closer than 15 feet from the riverbank. The proposed expansion of the airport frontage road will occur on top of the bank, adjacent to the existing road, and will not affect west bank SRA mitigation planting sites. There are 7,848 lf of SRA cover vegetation being planted in Reach A. Appendix D of the Mitigation and Monitoring Plan (Volume 2, Appendix 3), identifies the location and lengths of the individual planting sites in Reach A.

Response to Comment LUCAS-41

Please see the Response to Comment Lucas-30. The available data indicate that Guadalupe Creek currently provides water temperatures that would support chinook salmon and steelhead (Section 4.6.3.5 and Figure 4.6-2). The comment regarding warm temperatures in Guadalupe Creek is assumed to apply to the restoration site in lower Guadalupe Creek. The lower Guadalupe Creek segments currently provide water temperatures that would support juvenile chinook salmon and steelhead during most of the year for all life stages (Appendix 1C). Mitigation plantings would improve the suitability of water temperatures for all life stages.

Response to Comment LUCAS-42

The Corps and SCVWD appreciate your concern about maintenance of the Los Gatos riparian corridor. The Corps and SCVWD presently have no plans to remove trees on Los Gatos Creek.

August 14, 2000

U.S. Army Corps of Engineers
Sacramento District Planning Division
1325 J Street, Sacramento, CA 95814-2922

Attention: Nina Bicknese

RE: Draft General Re-Evaluation Report/Environmental Impact Report and Supplemental Environmental Impact Statement (draft report) for Proposed Modifications to the Guadalupe River Project, Downtown San Jose, California (project).

Dear Nina,

As a postscript to the four pages I faxed to you last week, please consider the enclosed data charts on stream flow and temperature for the Guadalupe River in downtown San Jose, at the USGS gage at the St. John Street Bridge, and pictures that have been taken in the project area.

It is difficult to analyze graphs and charts of derivative data if the data itself is not presented as a frame of reference. If the data used is not truly representative of base conditions in the river then any amount of statistical manipulation is not going to make it valid. Water supply management, groundwater cleanup pumping, and another third of the Guadalupe watershed are not assessed in this EIR, and are basic to the readings that are found at the USGS gage for the past 70 years.

Chart I is a compilation of readings from the St. John Street USGS gage from 1929 to 1961, that shows the mean cfs flows for each month, the days that actually had flows, and the acre feet of water that passed through the gage for that given year. This chart is important because it shows the flashy nature of the Guadalupe River flows, more than half the year there are no flows at all and yet for anadromous fish there are at least two or three months that have sustainable storm events. Some of these storm events are almost completely captured by the reservoirs but in this earlier time frame the Lexington Reservoir was not capturing all Los Gatos Creek. 1941-1943 flows are spread out throughout the year it appears as managed artificially but the other years are more indicative of natural conditions in the watershed, until the latter part of the 1950's when more conservative manipulation takes over again. LUCAS2-1

The second chart shows the Santa Clara Valley Water Conservation District Hydrologic Data for two thirds of this 'baseline' period and illustrates the volume of water entering the Upper Guadalupe River and Los Gatos Creek from their watersheds on the eastern and western sides of Mount Umunhum, how much was percolated naturally into the streams and how much into the Santa Clara Valley Water Conservation District facilities. There is more extensive reservoir storage and diversion data but this is the overall chart that shows the diminishing volume of stream flows to the S.F. Bay. Has this base data been incorporated into the flow statistics presented in this EIR? Is there any distinguishing of Upper Guadalupe River flows and Los Gatos Creek flows?

The beneficial instream uses for water supply must be addressed as well as base flows for the indicator anadromous fish populations. Is this comparison of ongoing demands of these essential instream uses made in any of the statistical analysises as to overlap, are they in conflict or can they complement water regimen schedules? LUCAS2-2

My third chart will have to be submitted for the Upper Guadalupe River project deadline in September. It is what I think your measured flow and water temperature data in Appendix 1, Volume 2, should incorporate, along with water quality and chemistry. I am not comfortable with the science in any of these 'monthly percentiles of daily Guadalupe River flows' and thermal suitability and simulated temperature graphs, or the Volume 1, Chapter 4 hydrologic and hydraulic conditions, as it is unclear how the base data of IBM/Fairchild flows & Los Gatos Creek flows are weighted. LUCAS2-3

The thermal impacts for flows coming out of Los Gatos Creek are positive for fish, but how much cooler are these flows? How clean are these flows chemically? The Los Gatos Creek watershed is characterized as being purely residential but the car wash, the industrial park for Campbell, the highway runoff from #17 and #85 and any old and new little businesses from downtown San Jose to the Santa Cruz mountains can contribute unknown quantities of chemical suds. Water quality needs to be assessed. LUCAS2-4

The California State Water Resources Control Board's Toxic Substances Monitoring Program 1984 report listed the Guadalupe River as having copper, lead, mercury, Chlordane, Lindane and PCB's exceeding EDL 85, FDA action level or NAS guidelines. The USGS data from 1978 to 1991 appears to have been collected along the full range of chemical constituents of the Guadalupe River water at the St. John Street gage. Thermal conditions have a direct correlation with the negative impacts of certain chemicals on the ecosystem of the river and on San Francisco Bay ultimately. And, it would appear that this data was collected in support of the COE activities in flood control for this river. How is this reflected in this EIR? Is a supplement analysis indicated? Mercury can be called 'naturally occurring', but not the rest? LUCAS2-5

Chart 4 is of the trees counted in the project area for the Park of the Guadalupe EIR, and as this recreation plan is incorporated into this full project it would be important to have an update on this riparian resource and the ordinance trees. Is this somewhere in the EIR that I have missed, or is it reflected somehow in the SRA discussions? If not, this is a deficiency and such a report should be included. LUCAS2-6

The riparian corridor of the Guadalupe River was sufficiently lush when I first walked it in 1976 that the sound of the songbirds drowned out all noise and traffic from downtown San Jose. The biodiversity that this river system supported was an amazing resource and a treasure that oldtimers of the community truly valued. I will attempt to assemble some pictures of this period but will send them later, too. It is an archeological dig of sorts as the boxes on this topic fill a garage.

Chart 5 I am sending along as an interim to show the peak summer temperatures in the period of record to be 22.0 C which is not quite lethal for a laggard salmon, but the important temperatures for his sustainability are the low winter temperatures of 10.0 to 13.0 C. This chart shows the worst winter temperatures as it incorporates the IBM/Fairchild 20cfs pumping period when flows heated up down the concrete Canoas Canal. Please plot the low sustainable salmon temperatures of October, November, December, January and February as predicted for the post-project as well as existing in the present conditions, and compare with the baseline water temperatures of 1984-85. If there is a difference can the tree loss account for it? LUCAS2-7

I believe it is erroneous to have mitigated for the wetlands and riparian losses of the downtown Guadalupe River flood control project on Guadalupe Creek as the intervening thermal conditions and lack of water(due to extreme percolation gravels) make it an improbable success story. As mitigation for the Upper Guadalupe project it has validity. But,now to assess this thermal mortality factor and claim that the Guadalupe River is not suited to a coldwater fishery is poor resource management. LUCAS2-8

The Los Gatos Creek should be included in this entire exercise as the dominant fish refugia, and as the upper third mile to what remains of the lower two miles of prime coldwater fish habitat that has supported this historic run of salmon and steelhead. Water temperatures of the segment 3 and the Upper Guadalupe River need to be held at a constant, guaranteed temperature level, throughout this entire flood control project, that will not overwhelm the thermal integrity of Los Gatos to Guadalupe River flows. But, this baseline thermal level must be determined by the regulatory agencies, now. Please require this scientific addendum to this EIR. LUCAS2-9

Sincerely, Libby Lucas Libby Lucas, 174 Yerba Santa Ave., Los Altos, CA 94022

PPS Please allow me a continuance for this last packet of pictures and thermal/flow chart with the USGS chemical analysis of 1978-1991. Thank you so much.

LIBBY LUCAS, LOS ALTOS, CALIFORNIA (AUGUST 14, 2000)

Response to Comment LUCAS2-1

This information was available to the Draft EIR/SEIS preparers. However, the Bypass System Alternative does not affect the volume of water that passes through the Guadalupe River. The Bypass System Alternative includes only channel modifications to accommodate floodflows and does not include water management features. Therefore this information is not pertinent to the environmental evaluation of the Bypass System Alternative.

See Response to Comment LUCAS-18.

Response to Comment LUCAS2-2

Section 4.3, "Water Quality," describes the beneficial uses of the Guadalupe River. The designated beneficial uses of the Guadalupe River identified in the Basin Plan include fish migration and spawning habitat. No statistical analyses were made regarding reservoir releases or other instream base flow regime management activities because no changes would be made to the hydrology of the river as defined generally by the amount of flow transported in the channel. The Bypass System Alternative includes only channel modifications to accommodate floodflows and does not include water management features. Therefore, this type of statistical analysis of base flows is not pertinent to the environmental evaluation of the Bypass System Alternative.

The activities and structural changes that are proposed, however, would modify the velocities and depths of flows at various locations along the affected river reaches. The site-specific project-related changes in these hydraulic conditions would affect resource conditions such as vegetation, water quality, and fisheries and constitute the primary "overlap" between environmental resources and hydraulic changes addressed by the comment. Therefore, the focus of the environmental impact analyses included SRA and riparian vegetation assessment; fish habitat evaluation with HEP procedures and extensive river temperature modeling; and water quality impact analyses of turbidity, dissolved oxygen, and mercury. Impacts were evaluated both qualitatively and quantitatively.

For additional information on this issue, please see Response to Comment LUCAS-18.

Response to Comment LUCAS2-3

It is necessary to summarize the measured temperature and flow data because of the large quantity of data that has been collected. The summary statistics provide a good portrayal of river conditions that could not be seen clearly by reviewing thousands of numbers.

Two types of flow analyses were performed. The general flow analysis determines typical flow conditions and facilitates selection of flows for temperature simulations. The flood-flow analysis is for determining the desired river capacity.

The pertinent value for floodflow analysis is the frequency and value of the higher flows. The Bypass System Alternative includes only channel modifications to accommodate floodflows; it does not include water management features. Therefore, the flows in Los Gatos Creek and other tributaries are expected to remain the same, especially under high flow conditions, because no flood protection construction is expected to occur on tributaries to the Guadalupe River.

The purpose of the general flow evaluation is to estimate the range of flows typically present in the river. Los Gatos Creek enters the Guadalupe River just upstream from the USGS gage and its flows are, therefore, incorporated in the flows measured by the USGS. Los Gatos Creek is not part of the project, so the project evaluation assumes that the Los Gatos Creek flows will be approximately the same as in the past. In order to evaluate flows under normal conditions, the IBM/Fairchild flows in Canoas creek were subtracted from the measured flows at the USGS gage.

The following change is made to Appendix 1A of the Draft EIR/SEIS:

Page 1A-5. Section 1A.1, "Measured Flow and Water Temperature Data," a footnote to Figure 1A-3 is added as follows:

> Note: IBM and Fairchild groundwater clean-up programs began during water year 1983, causing higher than normal flows in Canoas Creek and the Guadalupe River. Canoas Creek flows measured during this period were subtracted from the flows measured at the USGS gage.

Response to Comment LUCAS2-4

Los Gatos Creek is not part of the project, so the project evaluation assumes that the Los Gatos Creek temperatures will be the same as in the past. The historic flow and temperature values from Los Gatos Creek are part of the temperature-model assessment (U.S. Army Corps of Engineers, 2000d). The Los Gatos Creek temperatures have little effect in the temperature-model analysis because the Los Gatos Creek flows selected for the dry/median year (based on measured Los Gatos Creek flows) are no more than 0.5 cfs.

Because Los Gatos Creek is not part of the project, the project evaluation assumes that the Los Gatos Creek water quality will remain unchanged. The flows in the Guadalupe River are not expected to change as part of the Guadalupe River Project, consequently, the effect of Los Gatos Creek on water quality in the Guadalupe River is expected to remain the same. The combined effects of Los Gatos Creek and the Guadalupe River on water quality can be seen in the water-quality data from the USGS gage, which is downstream from the Los Gatos Creek confluence.

Response to Comment LUCAS2-5

The data referred to were collected primarily by the U.S. Geological Survey independently of the Guadalupe River Flood Protection Project. Water temperature affects the solubility of

certain constituents in water including hydrogen sulfide, volatile organic compounds such as gasoline, and inorganic gases such as oxygen, carbon dioxide, nitrogen and ammonia. In general, as water temperature increases, the solubility of these compounds in water decreases so that potential toxic effects are reduced. The solubility of most inorganic substances such as toxic trace metals is not affected by temperature. Temperature changes can affect the sensitivity of aquatic organisms to potentially toxic constituents or change the organism's metabolic rate, and thereby indirectly affect their rate of exposure to compounds. The temperature effects were addressed in the Draft EIR/SEIS with respect to compliance with regulatory temperature standards and potential effects on fish. The project-related temperature effects on dissolved oxygen were also addressed in the Draft EIR/SEIS. As indicated with the temperature modeling data, the long-term potential changes in temperature are relatively small because mitigation vegetation will restore shade to the river channel. The length of channel with postmitigation water temperatures that are higher than preproject temperatures will be less than the length of channel with lower postmitigation temperatures.

Response to Comment LUCAS2-6

Section 1.5.3.2 of the Draft EIR/SEIS (i.e., "City of San Jose Tree Ordinance") summarizes the City's tree ordinance and the San Jose City Council's definition of a heritage tree. This section also states that the Corps and SCVWD will comply with the City tree ordinance by consulting with the City Arborist to obtain a tree removal permit and meet City mitigation requirements for the loss of ordinance trees as a result of the Guadalupe River Project.

Response to Comment LUCAS2-7

Chart 5, submitted by the commentor, shows intermittent temperature measurements collected by the USGS at Gage 11169000 in the Guadalupe River near the Saint John Street Bridge. As stated in the comment, the highest reading in Chart 5 is 22 C. However, the number for July 7, 1987 should be 23 C as reported in the USGS report "Water Resources Data, California, Water Year 1987." The USGS measurements generally represent only one instant during one day of a month, and therefore cannot be used to determine average or average maximum water temperatures. Measured water temperatures for the Guadalupe River have exceeded 27 °C during some months (Appendix 1A).

Differences in measured water temperature over time do not clearly represent the effects of human activities because flow levels and weather vary from year to year. The water temperature simulation model was used to more clearly determine the effects of the project on water temperature. The simulation of temperature allows removal of the confounding effects of variable weather and flow levels and permits a clear representation of the effects of project changes to stream geometry and shade. Simulated water temperatures for preproject, postproject, and postmitigation conditions are presented in Figures 5.3-1 through 5.3-4 of the Draft EIR/SEIS, in Appendix 1C, and in U.S. Army Corps of Engineers (2000d).

The simulated water temperatures represent the effect of potential shade loss and alteration of channel geometry.

The simulated temperatures include values for October through February. Measured temperatures for these months are presented in Tables 1A-4 through 1A-15 of Appendix 1A of the Draft EIR/SEIS. These temperatures cannot be compared with the 1984-1985 temperatures because 1984-1985 temperatures were not simulated and hourly temperatures were not measured. There are some differences between preproject and postproject temperatures for October through February with most of these differences attributable to loss of shade. However, the effect of project construction on water temperature during these months is small because of relatively high flows, reduced solar radiation, and loss of deciduous foliage.

Response to Comment LUCAS2-8

The Guadalupe River Project proposes to use a portion of the Guadalupe Creek Restoration Project to mitigate impacts on SRA cover vegetation, chinook salmon and steelhead habitat, and aquatic habitat. Plantings will also occur in Reach A, downstream from the project area, to mitigate impacts on SRA cover vegetation, chinook salmon and steelhead habitat, and aquatic habitat. Riparian impacts of the Guadalupe River Project with Bypass System Alternative have been or will be mitigated onsite, not on Guadalupe Creek (Section 3.4.2.9, "Onsite and Offsite Mitigation Areas"). As described in Section 5.4.3.3, "Wetland and Other Waters of the United States," no jurisdictional wetlands would be adversely affected by the Bypass System Alternative.

Water temperatures in the Guadalupe River during the anadromous fish migration period would be within the range that would support migration of adult and juvenile chinook salmon and steelhead to Guadalupe Creek (Section 5.6.4.1, "Adult and Juvenile Anadromous Fish Migration," and Appendix 1C). Guadalupe Creek and Alamitos Creek provide some of the better conditions in the Guadalupe River watershed for steelhead spawning, smolting, and rearing and chinook salmon spawning and rearing (Section 4.6.3.5, "Water Temperature," and Figures 4.6-2 and 4.6-3).

The Guadalupe River also provides favorable conditions for steelhead spawning, smolting, and rearing and chinook salmon spawning and rearing (Section 4.6.3.5 and Figures 4.6-2 and 4.6-3). Postmitigation conditions in Reach A will be substantially better than preproject.

Response to Comment LUCAS2-9

The project will not affect water temperature in Los Gatos Creek. Based on existing water temperature information, water temperatures at the Los Gatos Creek-Guadalupe River confluence would not support steelhead spawning and would often be marginal for chinook salmon spawning (Section 4.6.3.5 and Figure 4.6-2). Project effects on water temperature in Segment 3, which encompasses the Los Gatos Creek-Guadalupe River confluence, are described in Section 5.3 and subsequent effects on chinook salmon and steelhead are

described in Section 5.6. Appendices 1A and 1C provide additional information. A scientific addendum to the Draft document would be redundant, relative to the description of project effects in Chapter 5 of the Draft EIR/SEIS. See Response to Comment LUCAS-4.

U.S. Army Corps of Engineers
Sacramento District Planning Division
Attn: Nina Bicknese
1325 J Street
Sacramento, California 95814-2922

I submit the following comments concerning the Draft General Re-Evaluation Report/Environmental Impact Statement for Proposed Modifications to the Guadalupe River Project, Downtown San Jose, California. I believe the issue of mercury contamination from the New Almaden (and associated) Mercury Mines has not been adequately addressed. I appreciate your consideration of these comments with respect to the subject report/project(s). PIZZO-1

Patrick P. Pizzo, 1555 Oak Canyon Drive, San Jose, CA 95120

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Restoration of Guadalupe Creek

The Santa Clara Valley Water District, in cooperation with many other public agencies, is implementing restoration of the Guadalupe Creek in the area of Coleman Road (between the Almaden Expressway and Camden Avenue). Part of the restoration involves the growth of native shade trees along the Guadalupe Creek. Coupled with the deepening of pools along the creek and guaranteed water flow throughout the year, the plan is to lower the water temperature to make the creek conducive to trout and coho salmon habitat. Fish ladders and ponds are also being created along the Guadalupe from the bay, inland, to provide a continuous path for migration of fish species. PIZZO-2

I was born and raised in San Jose and as a boy, spent many hours exploring the Guadalupe and Alamitos Creeks. I also spent many hours exploring the mercury mines and tailings of New Almaden, the Guadalupe, and Oak Hill. Signs warning the public of mercury contamination of the fish have been a constant reminder of the mercury mining history of the valley. It is this Hg contamination that begs the following questions concerning the creek restoration plan. Why are we encouraging the development of fish habitat in these contaminated streams? Won't migrating fish species carry the Hg contamination to other parts of the world through mercury-chloride compound formation and build-up in their internal organs? How will the effort to deepen ponds in the Guadalupe Creek redistribute Hg-bearing sediments? Must the sediment removed from the creek be treated as contaminated waste; and how will this effect the overall cost of the project? PIZZO-2

There have been public hearings concerning the Guadalupe Restoration project, but the mercury contamination issue has not been adequately addressed. I think it should be. It is conceivable to me that, despite warning signs, people will catch and consume fish in the Guadalupe creek. Further, fish will convert the available mercury and mercury sulfide to more biological-hazardous compounds, and fish migration will carry the Hg contamination to other areas. Contamination will move up the food chain. I ask the SCV Water District and other agencies [including the U.S. Army Corps of Engineers] to consider the question of mercury contamination. PIZZO-3

Patrick P. Pizzo

PATRICK P. PIZZO (N.D.)

Response to Comment PIZZO-1

See Responses to Comments RWQCB-10 and USFWS-19.

Responses to Comments PIZZO-2 and PIZZO-3

Detailed studies are currently being conducted to determine whether efforts to restore Guadalupe Creek would contribute to the distribution of mercury-bearing sediments and the possible effects of that distribution. This evaluation will also address whether sediments removed from the creek need to be treated as hazardous waste. If large volumes of sediment are characterized as hazardous and need to be disposed of accordingly, the cost of the project would increase corresponding to the increased costs associated with transport and disposal.

Construction of the Guadalupe Creek Restoration Project is expected to reduce mercury-bearing sediments because of the proposed excavation of sediments. In addition, a soil management plan will be implemented that is similar to the one proposed for the Guadalupe River Project (see Response to Comment RWQCB-9). These issues are addressed in an EIR/EIS for the Guadalupe Creek Restoration Project issued in November, 2000.

Fish could transport mercury residues that have bioaccumulated in their tissues offsite. Although the fish themselves are not responsible for the transformation of mercury, they present a route of possible mercury exposure to humans who might eat them. While it is known that mercury accumulates in fish and birds, studies are still underway to determine the toxicity or impacts associated with such bioaccumulation on these species. It is further acknowledged that posting warning signs about contaminated fish is merely an administrative control. However, control of mercury in fish tissues would reduce human exposure. Reducing mercury loading should serve as a complement to restoring and improving fish and wildlife habitat.

Bioaccumulation issues, addressed as methylation of mercury, were discussed in Section 5.3.3.3, "Toxic Constituents – Mercury" and Section 6.2.4.3, "Toxic Constituents – Mercury." It is believed that the Bypass Alternative will not increase the formation of methyl mercury. By creating a better defined low flow channel, flows will be more concentrated and less stagnant, resulting in a reduction in anoxic conditions. However, commitments to monitor methylation before and after project construction and throughout the watershed as a whole have been made (in Section 5.3.3.3, "Toxic Constituents – Mercury" and Section 6.2.4.3, "Toxic Constituents – Mercury").

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SOBRATO
DEVELOPMENT COMPANIES

July 31, 2000

U.S. Army Corps of Engineers
Sacramento District Planning Division
Attention: Nina Bicknese
1325 J Street
Sacramento, CA. 95814-2922

Re: Comments on the Draft Report/EIR
Proposed Modifications to the Guadalupe River Project
Downtown San Jose, California

Dear Ms. Bicknese:

We are the owner of the 14.3 gross acre site located on New Julian Street which is impacted under the proposed Bypass System Alternative, Segment 3A, of the "Project". Our comments and concerns are as follows:

The description of the Sobrato Development Companies land as "planned for future development" (para. 8.6.2.2) is incorrect. Sobrato has constructed and leased to Metricom, Inc. two five story office buildings and is under construction on a five level parking garage structure. We are also into the City with building plans for the final office building for the site, a seven story office building which will begin construction upon completion of the parking structure. At the request of the SCVWD and Army Corp of Engineers (Brandon C. Muncy, Senior Project Manager), Sobrato has made available civil and architectural plans such that the Corp. is fully aware of our progress and activity. SOBRATO-1

It is important to understand that Metricom, Inc. is now in occupancy at the site and it is now their world headquarters. Metricom has a leasehold interest in the property and should be notified in accordance with that interest. We have provided the SCVWD with the necessary information for that purpose. Metricom may wish to comment separately regarding this Project.

The owner and tenant should be compensated for all of the Project impacts on the land, improvements, long term value and tenant rights to quiet enjoyment. It is imperative that there be continued access to new West Julian Street with street light access as there is now. Also, any improvements and necessary rights of way must not interfere with existing or approved structures as permitted under the projects Site Development Permits approved by the City of San Jose. SOBRATO-2

Construction of the Project should be phased and constructed so as to minimize (or eliminate) the duration of construction time on the site, the loss of parking, noise, access restrictions, dust and inconvenience to tenants and owner. All Project improvements must be completely below grade and out of site upon completion and all site improvements returned to their original condition. SOBRATO-3

Sincerely,

William E. Burns

William E. Burns
Senior Vice President
bill@sobrato.com

SOBRATO DEVELOPMENT COMPANIES, WILLIAM E. BURNS (JULY 31, 2000)

Response to Comment SOBRATO-1

Comment noted. Section 8.6.2.2, "Need for Land," will be revised.

The following change is made to the Draft EIR/SEIS:

Page 8-25. Section 8.6.2.2, "Need for Land," is modified as follows:

8.6.2.2 Need for Land

The Refined Bypass System Alternative will require additional right-of-way acquisition from UPRR lands and Sobrato Development Companies' lands. The Refined Bypass Alternative would eliminate the need to widen the natural channel within UPRR lands as was required by Segment 3A, thus avoiding effects to existing vegetation and landforms. However, UPRR would be restricted as to what could be developed or constructed above the bypass system. Construction of the proposed bypass alternative will have to cross beneath an existing UPRR spur line.

Sobrato Development Companies purchased their land from Food Machinery Corporation (FMC) in June 1998. Sobrato Development Companies has constructed two five-story office buildings, and a five-level parking garage is under construction. Sobrato Development Companies is also planning to construct a seven-story office building on the site~~. for a planned future development.~~ Construction of the bypass alternative will need to be compatible with this future development.

Response to Comment SOBRATO-2

Compensation for potential impacts of the Bypass System Alternative will be negotiated between SCVWD and Sobrato. The Corps and SCVWD will continue to coordinate with Sobrato, their consultants, and their tenant through completion of construction regarding site access and lighting.

Response to Comment SOBRATO-3

The Guadalupe River Flood Protection Project is committed to minimizing the impacts on the owner and tenant. As discussed at meetings, April 10, 2000, April 20, 2000, and August 3, 2000, between the Corps, SCVWD, the Redevelopment Agency of San Jose, various consultants, and Sobrato Development Companies (Sobrato), the project will include construction of an at-grade recreation trail/maintenance road, which may include park benches, lighting, and other amenities. In addition, any air relief structures associated with the underground bypass box culverts will be incorporated into the landscaping to minimize the visual impacts. The Corps, SCVWD, City of San Jose, and Agency will meet to discuss,

coordinate, and solicit comments from Sobrato and Sobrato's tenants on these improvements.

The draft EIR/SEIS does disclose that construction will affect normal noise, transportation, and air quality levels. Section 3.4.3, "Environmental Commitments," includes measures to control dust based on the Bay Area Air Quality Management District's feasible control measures for PM10 emissions and measures to compensate for the temporary loss of parking at the Sobrato property during construction of the bypass. With the exception of the bypass inlets and outlets, the completed flood protection bypass will be below grade and site improvements on the Sobrato property will be returned to their original condition.

CHAPTER 6

Public Hearing

Public Hearing Transcript
(beginning on page 25)

At this time, I will formally open the record for public comments. The purpose of the public hearing tonight is to receive your comments on the draft report for the proposed modifications to the Guadalupe River Project in downtown San Jose.

We do want to ensure that your comments about the draft report are considered before we complete the final report and before decisions are made to improve and implement the modified project. We are in the middle, at this point, of about a 45-day public review period for this draft report and well into a planning process that is consistent with the National Environmental Policy Act, the California Environmental Quality Act and other related laws and regulations. In addition to the

opportunity to provide your comments here tonight, we will accept your written comments at any time up until the 9th of August this year.

My role tonight as Hearing Officer is to ensure that anyone who wishes to provide oral or written comments for the public record has an opportunity to do so. In order to provide this opportunity, the hearing tonight is not structured as a forum for discussion and is not formatted for interactive questions and answers.

We are recording your comments and will respond to all that are pertinent to the draft report in the preparation of the final report. You are welcome to provide any pertinent comments in writing if you would rather not speak publicly this evening.

Staff is available to provide you with speaker cards which look like this. They're available outside on the table, and Tony, to my left, will make them available if you raise your hand and indicate that you'd like to have one. We also have available for you forms like this outside on the table if you would like to provide written comments to us this evening.

In the interest of time, please try to limit your oral comments to about five minutes, and if you have prepared written comments that you brought, we'd appreciate it if you could summarize those for us orally

and then provide us with a copy of your written comments for the record.

Finally, when you step to the microphone, if you would please clearly state your name and your address for the record, and with all of those instructions put out there, we'll actually get underway now with the public comment period. So again, as we begin this, if you would like to receive a speaker card, if you could just hold up your hand and Tony will make sure that you get a card to fill out.

I do have two cards in front of me already, so anyone else who would like to speak tonight, I would encourage you to go ahead and fill out a card. With that, the first card that I have this evening is from Mr. William Garbette, representing the public.

Mr. Garbette?

MR. GARBETTE: I'm William J. Garbette representing the public, Post Office Box 36132, San Jose 95158-6132.

Colonel and Board Members, I've been before you a number of times over the past decades regarding this particular project. Approximately 10 years ago, we had a meeting where the conclusion was made there would be no box culvert. This came back to haunt us again through your manipulation of NEPA and CEQA on a rule of PH-1

reason where you stacked the deck where only what someone wants is the only alternative that you consider. For instance, an open bypass channel could have had two entrances and survived your test for CEQA and NEPA very easily. But instead, you only had one inlet with your comparison. This is your rule of reason, stack the deck so it won't be considered. You've had litigation in the past. The only alternative that is acceptable at this point in time is the no project alternative considering the inclusion of your box culvert. That is the only one acceptable to the community and testimony and past years and in my testimony this evening. PH-1

You have failed in some respects to basically consider a number of things in your report. By the way, there, I do have to say, you have many good things in your report. Many things that are well written, and it's environmentally sensitive in many respects, so don't let me -- my negative comments overshadow any positive aspects of the work that you've done. The work that you have done is very positive.

But the box culvert is one of those things you have not, for instance, considered when the removal of the housing in the downtown areas and the airport right-of-way. You haven't considered the fact that we have a homeless population. We have a census that is PH-2

actually counting those people this year, and they do exist. The homeless will always be with us.

Unfortunately, 25-foot square foot box culvert is not the new motel or hotel we need in town. With flooding, it becomes a deathtrap where you will have loss of life. It is also an attractive public nuisance.

If you think there is a lot of homeless living in the area now, wait till you get a box culvert there. Can you put guards over the entrances and exits? Well, it's like they put a fence up for the railroads. The path is going to be open the following day in almost every aspect. However, when flood waters come without warning, it will certainly mean loss of human life in every instance.

PH-2

Unfortunately, we've had too many of our 100-year floods lately, thanks to our engineering that we've had from our water district. Our water district is now seeking refunding. Think about your past history. Do you deserve refunding again?

With this, you have to look a little bit beyond. We had an anadromous fish that you're proposing to introduce to restore the environment. What about our present native fish that are fresh-water fish that remain in the Guadalupe River all year round? Haven't seen any mention of them, any fish counts or any

PH-3

biological diversities of the species mentioned in your reports. The biggest fault that you have is, in your release of that report, you have only released Volumes 1 and 2 for public circulation. You have kept Volume 3 for the Corps of Engineers and the Water District only. Somehow I managed to badger a copy out of you tonight, but in every case that needs to be circulated because all volumes are part of the CEQA and NEPA process. They are public documents that should freely be circulated to the public. Without these documents, the third volume being in public circulation, this hearing tonight is a farce, and it should be rescheduled at such time when you do release Volume 3 for public viewing and comments. Thank you.

PH-3

PH-4

MR. WADLOW: Thank you, Mr. Garbette.

The second card I have this evening is from M.J. Lowe-Peyton.

Did you wish to address this? Thank you.

MS. LOWE PEYTON: My name is M.J. Lowe-Peyton. I live at 1547 Oak Canyon Drive, which is in the Guadalupe Creek mitigation area. I have read the report, and I think it's an excellent report, and the proposals for the downtown area look good. I just had some areas that were a little unclear in the Guadalupe Creek Mitigation Area, which is the little teeny piece that was up on the

PH-5

map. Specifically, the report had talked about recreation and the need for trails, and there seems to be quite a few trails in downtown. We have the same need in the Guadalupe Creek Mitigation Area. We have a number of homes and families in that area. There will be a lot of planting of plants in that area, and at the time that you're in there planting the trees, it would be very easy to put trails in, and those would be used heavily by the population in that area, and I would urge you to modify the plan, if possible, to add some trails down in that little piece of the project. PH-5

The second thing I had a question about was just in general for the public as you do your construction, and I wanted to know if there was dredging in that area; and, if so, what the hours of the dredging might be, how you might mitigate the noise and the dust that would be from that for our community and our neighborhood since we do have a lot of children and a lot of families. PH-6

And the third thing is that in that Guadalupe Creek Mitigation Area, the report mentioned that the percolation ponds will be allowed to dry up and will not be used up anymore, and I was curious as to how the ground water that would normally have been recharged by those percolation ponds will now get recharged if it will be done in a different area or what exactly is PH-7

going to be done to have that ground water recharging, or will we back in the position we were in before we were able to do ground water recharging, and specifically, that will open up a lot of land, and I wanted to know if there was any ideas about the land being sold or being used for parks or some other idea what might be done with that open land. Those are my questions, and I'm sure they'll be addressed. Thank you. PH-7

MR. WADLOW: Thank you, Ms. Lowe-Peyton.

The third card that I have before me is from Mr. Jim Towery.

MR. TOWERY: Members of the Board, Colonel Walsh, my name is Jim Towery. I am President of the Guadalupe Park and Gardens. We are a nonprofit organization. And I think of ourselves as a citizen advocacy group for, number one, the completion of this long gestational park; and, number two, the wide public usage of it. Our organization is particularly proud of the fact that it was from our ranks that sprang the idea of the collaborative process, and we are extremely pleased that that collaborative process led to a meeting of all of the public partners of this agency and resulted in the settlement agreement. PH-8

We will be submitting written comments in

addition to these oral comments, but I was struck tonight by the comments that Colonel Walsh made at the beginning that it is not unique to San Jose to look at an urban river as a resource. That is clearly a major shift that is occurring in our town, and we appreciate the fact that these project revisions incorporate what should be the multiple uses of this, not only for flood protection and protection of the environment, but for the recreational elements as well, and that is probably the issue that is of greatest interest to us.

One of the activities that our organization has been involved in is sponsoring events that bring people to the Guadalupe River --

(End of Side One.)

MR. TOWERY: -- just yesterday, for example, I was watching a troop of Girl Scout Brownie's -- I hope that's not incorrect terminology -- who were participating in an educational program about the water shed that we are putting on, and their enthusiasm was really palpable.

Let me turn to our comments on this. First of all, from a broad perspective, our organization is strongly supportive of the modifications set forth in this report. We are pleased that the box culvert collusion solution has addressed the environmental

PH-8

concerns and the flood control concerns, and we think that it can be well integrated into the necessary recreational uses.

PH-8

A couple of specific comments: I think our organization has only recently come to appreciate the massive nature of intake structures, and that is an issue that we hope the designers of the project will give further consideration to. Because of their central location, particularly the intake structure north of Santa Clara Street, we hope that these intake structures can be integrated to the natural landscape to the greatest degree possible.

PH-9

We also hope that safety concerns, particularly in light of the fact that there this is an area frequented by children. There are also many homeless this year, that's the safety concerns posed by the inlet structures are an issue that can be addressed.

PH-10

One other note, I would like to point out, echoing the comments of the prior speaker, one comment we have consistently had from our board members, from our membership, and from the public is what this park needs is an integrated trail system, and we are very pleased to see in this design such attention given to trails. Our ultimate goal is not only an integrated trail system throughout the reach of the Guadalupe River

PH-11

Park and one that ties into the lower Guadalupe and goes out to the Bay and ties into the Los Gatos Creek Trail and the Upper Guadalupe as well.

We commend the designers of this project for the attention that has been paid to the trail system, and we would only advocate the early completion of those trails in any way possible.

Thank you very much for your attention.

PH-11

WILLIAM J. GARBETTE, PUBLIC HEARING ON DRAFT GRR/EIR/SEIS, SAN JOSE, CALIFORNIA (JULY 26, 2000)

Response to Comment PH-1

Chapter 2 of the Draft EIR/SEIS includes information on plan formulation and evaluation criteria and screening of project alternatives. As indicated in Section 2.2.5, "Preliminary Bypass Alternatives," an open channel bypass extending from Santa Clara Street to upstream from Coleman Avenue was considered. The alternative did not meet the evaluation criteria described in Section 2.1.2, "Alternative Development and Evaluation Criteria" and was eliminated from further consideration because of public safety concerns and cost.

Response to Comment PH-2

The bypass would operate in a manner that would not compromise public safety. As indicated in Section 3.4.2.1, "Bypass System," public access to the interior of the bypass would be prohibited. In addition, Section 5.8.3.2, "Operation and Maintenance" has been updated to clarify the City of San Jose Police Department's role in addressing illegal activities along the Guadalupe River and in the bypass.

Response to Comment PH-3

Chinook salmon and steelhead currently occur in the Guadalupe River and are not introduced (Section 4.6.2, "Special-Status Fish Species"). Steelhead reside in the Guadalupe River system throughout the year. Other species known to occur in the Guadalupe River system are discussed in Section 4.6.1, "Fish Known to Occur in the Guadalupe River." The impact assessment (Section 5.6, "Biological Resources – Fish") evaluates effects on fish habitat and covers the range of environmental conditions affecting all species. Chinook salmon and steelhead are discussed in greater detail because they are more sensitive than other species to some environmental conditions, such as water temperature, and because of the steelhead's listing under the Endangered Species Act and the chinook salmon's protection under the Magnuson-Stevens Fishery Conservation and Management Act. The analysis concluded that the Bypass System Alternative would not result in significant adverse effects on resident fish.

Response to Comment PH-4

Volumes 1 and 2 of the Draft General Re-Evaluation and Environmental Report for Proposed Project Modifications contain the Draft EIR/SEIS and supporting information that was used in conducting the environmental evaluation, respectively. Volume 3 contains information pertinent to the General Re-Evaluation, including engineering information, real estate plan, economic analysis, and recreation plan. The Corps and SCVWD concluded that information contained in Volume 3 was not directly related to the public review of the

EIR/SEIS. Although Volume 3 was not distributed, the Corps and SCVWD have made Volume 3 available for public review.

M.J. LOWE-PEYTON, PUBLIC HEARING ON DRAFT GRR/EIR/SEIS, SAN JOSE, CALIFORNIA (JULY 26, 2000)

Response to Comment PH-5

The impacts of the Guadalupe Creek Restoration Project are addressed in a separate EIR/EIS being prepared by SCVWD and the Corps. The restoration project is in the early design phase, and formal public access along the levees is being considered by SCVWD with input from the San Jose Parks and Recreation Department.

Response to Comment PH-6

The construction-related impacts of the Guadalupe Creek Restoration Project are being addressed in a separate EIR/EIS being prepared by SCVWD and the Corps. Typically, construction activities would be restricted to daylight hours and dust would be controlled through use of the Bay Area Air Quality Management District's feasible control measures for emissions from soil removal activities.

Response to Comment PH-7

The Bypass System Alternative will not affect the operation of the percolation ponds adjacent to Guadalupe Creek. The impacts on groundwater recharge associated with the Guadalupe Creek Restoration Project will be addressed in a separate EIR/EIS being prepared by SCVWD and the Corps. Although instream groundwater recharge activities conducted by SCVWD were suspended in the 1990s, groundwater continues to be recharged through channel beds and offstream percolation ponds in high recharge areas.

Response to Comment PH-8

The Corps and SCVWD appreciate the continued support of the Guadalupe Park and Gardens Corporation.

Response to Comment PH-9

See Response to Comment CSJ-2.

Response to Comment PH-10

See Response to Comment CSJ-3.

JIM TOWERY, PUBLIC HEARING ON DRAFT GRR/EIR/SEIS, SAN JOSE, CALIFORNIA (JULY 26, 2000)

Response to Comment PH-11

The Corps and SCVWD, in conjunction with the City of San Jose Redevelopment Agency and City of San Jose, have worked and will continue to work to provide flood protection components that achieve multiple objectives including attractive and accessible recreation features.

CHAPTER 7

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Acronyms and Abbreviations

CCR	California Code of Regulations
CIMIS	California Irrigation Management Information System
CVPIA	Central Valley Project Improvement Act
Draft EIR/SEIS	Draft Integrated General Re-Evaluation Report/Environmental Impact Report/Supplemental Environmental Impact Statement
DRM	Dispute Resolution Memorandum
DTSC	The California Department of Toxic Substances Control
FAHCE	Fisheries and Aquatic Habitat Collaborative Effort
FMC	Food Machinery Corporation
Lower Guadalupe River Project	Lower Guadalupe River Flood Protection Project
MSHCP	Multiple Species Habitat Conservation Plan
O&M Manual	Final Operation and Maintenance Manual for the Guadalupe River Project
SI	Suitability Index
SMP	Soil Management Plan
Sobrato	Sobrato Development Companies
SVOCs	semivolatile organic compounds
TPHd	total petroleum hydrocarbon as diesel
TPHg	total petroleum hydrocarbon as gasoline
TRPH	total recoverable petroleum hydrocarbon
Upper Guadalupe River Project	Upper Guadalupe River Flood Control Project
VOCs	volatile organic compounds
WET	Waste Extraction Technique